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STUDIES OF ATTITUDE AND ATTITUDE MEASUREMENT. PROGRESS
REPORT.

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STIMULUS BEHAVIOR,

A DIAGRAMATIC OVERVIEW IS PRESENTED OF A PROJECT WHOSE
GOAL IS A SYSTEMATIC AND COMPREHENSIVE STUDY OF THE EFFECT OF
AN ATTITUDE UPON A VARIETY OF RESPONSES. DEPENDING UPON THE
OUTCOME OF THIS WORK, CERTAIN RESPONSES WILL BE CHOSEN AS
INDICATORS OF ATTITUDE, AND WILL BE UTILIZED AS BASES FOR THE
CONSTRUCTION OF ATTITUDE MEASURES. THE SET OF STANDARDIZED
MEASURING INSTRUMENTS WILL PROVIDE A BASIS FOR INFERENCE
ABOUT ATTITUDE. FOR THESE INSTRUMENTS, THE EFFECTS OF
PROBABLE RESPONSE DETERMINANTS OTHER THAN ATTITUDE WILL BE
MINIMIZED OR SYSTEMATICALLY CONTROLLED. THE RESPONSES BEING
STUDIED AND THE MEASURES BEING DEVELOPED ARE CLASSIFIED IN
TERMS OF THE EVIDENCE THEY PROVIDE AND THE INFERENCES DRAWN
FROM RESPONSE TO ATTITUDE DIRECTION AND STRENGTH. A TOTAL OF
27 STUDIES ARE INCLUDED IN THE EIGHT CATEGORIES OF POTENTIAL
MEASURES-- (1) OVERT BEHAVIOR TOWARD THE ATTITUDINAL OBJECT,
(2) INTERPRETATION OF, AND REACTIONS TO, INCOMPLETE OR
AMBIGUOUS STIMULI, (3) ADEQUACY OF TASK PERFORMANCE, (4)
JUDGMENTS OF ATTITUDINALLY RELEVANT MATERIALS AND PERSONS,
(5) CHOICE OF CLASSIFICATORY PRINCIPLES, (6) INVOLUNTARY
PHYSIOLOGICAL RESPONSES, AND (8) VERBAL SELF REPORTS. THE
SAMPLE TYPE AND NUMBER, METHODOLOGY, DEVELOPMENT OF MATERIAL,
DATA ANALYSES, AND RESULTS ARE PROVIDED FOR EACH STUDY. (PS)

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STUDIES OF ATTITUDE AND ATTITUDE MEASUREMENT

Progress Report

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STUDIES OF ATTITUDE AND ATTITUDE MEASUREMENT

Brief Summary of Work Accomplished and in Progress

The goal of the project is to make a systematic and comprehensive study of the effect of an attitude upon a variety of responses. Depending upon the outcome of this work, certain responses will be chosen as indicators of attitude. These responses will be utilized as bases for the construction of attitude measures.

Many of these measures will be based upon indicators which do not involve introspection or self-description on the part of the subject. For this reason they should be free of some of the disadvantages characteristic of self-report questionnaires and interviews; among these disadvantages are tendencies of the subjects to answer in terms which they believe to be acceptable or expected. Hence, the end result could be said to be the development of a set of standardized measuring instruments which can provide a clear basis for inference about attitude and in which the effects of probable response determinants other than attitude are minimized or systematically controlled.

The responses being studied and the measures being developed are classified in terms of the nature of the evidence they provide and the nature of the inferences drawn from response to attitude direction and strength. Eight categories of potential measures are being explored:

1. Overt behavior toward the attitudinal object.
2. Interpretation of and reactions to incomplete or ambiguous stimuli.
3. Adequacy of task performance.
4. Judgments of attitudinally relevant materials and persons.
5. Choice of classificatory principles.
6. Perceptual responses.
7. Involuntary physiological responses.
8. Verbal self-reports.

The work being carried out in each of these categories is described briefly below. This summary is intended as a diagramatic overview. More detail on the findings of much of the work is given in reports which have been published or are available in mimeographed form.

1. Measures Based Upon Overt Behavior Toward the Attitudinal Object

Here we are exploring conditions under which inferences may be drawn from reactions to representatives of an object-class (i.e., Negroes) to specific and concrete instances of anticipated relationships with representatives of the object-class. In this case the inference is direct. Where the experimental procedure makes it possible to divorce the reactions to attitudinally relevant stimuli from those to other determinants, a simple correspondence between attitude and reaction is assumed, (i.e., friendly reaction indicates favorable attitude).

Outline

- A. Photograph Release Test
- B. Person Reaction Test

A. The Photograph Release Test

a. Background

This test is essentially a situation (devised by DeFleur and Westie, 1958) in which the subject is asked to pose for photographs with members of the social group which is the object of the attitude. The object of this technique is to obtain a graded set of responses to a specific and concrete instance of anticipated public association with Negroes. As DeFleur and Westie used it, white subjects viewed a number of color slides showing a young Negro man and a young white woman, or a young white man and a young Negro woman, in a social setting. Subjects described the pictures and answered specific questions about them. At the close of the interview following this session, subjects were told that another set of such slides was needed for further research, were asked if they would be willing to be photographed with a Negro of the opposite sex and then were given "a standard photograph release agreement," containing a variety of uses to which such a photograph would be put. These ranged from laboratory experiments where it would be seen only by scientists to a nationwide publicity campaign advocating racial integration. The subject was asked to sign his name to each use of the photograph which he would permit. DeFleur and Westie report that subjects "uniformly perceived the behavioral situation posed for them as a highly realistic request."

bb. Purpose

The purpose of our work has been to develop a behavioral measure of attitude which would appear more realistic than the situation used by DeFleur and Westie. We also wished to control for the other influences which might determine the behavior of the subject in the situation (e.g., interest in modeling as a determinant of willingness to pose for interracial photographs).

The situation chosen is that of posing for photographs for use in textbooks to be published in the near future. The subject receives a letter on the stationery of the Unified College Press stating that a local representative had been hired to locate people who might be included in such photographs. The subject is asked whether he would like to report for a paid interview where the details of the situation would be explained to him. After **having** received the letter, he is called on the telephone to arrange for the interview.

A textbook published by the Unified College Press is shown to the subject. He is then shown a series of scenes or is read a description of such scenes. For each he is asked to indicate his interest in posing in the role of a designated person in the scene, and if interested, he is asked to sign a "release" which would free the publisher to use the photograph

for a designated purpose. An explanation is given which limits the subject to accepting no more than half the pictures. Another explanation leads the subject to sort the accepted pictures into preferred and non-preferred groups.

c. Pilot Study A

Development of Materials. Half of the sketches shown to the subject involved only white persons, the other half were interracial. The characteristics of the all-white and interracial situations were chosen in order to make pairs of pictures as similar as possible except for their racial composition. The scenes varied along six steps in the intimacy and status relationship pictured between the participants. Pretests had shown that the type of scene in which the subject was to be photographed in a friendly relationship with a Negro person of the opposite sex gave the highest proportion of rejections.

An additional dimension was added by asking the subject to indicate his willingness to allow each picture for which he posed to be used in a specific way. The ways varied from a textbook to be published only in a foreign language and sent to another country, to a Life magazine story to be based upon the preparation of such textbooks. It was assumed that the subject imagined that few people would see the photograph published in the first case and that many, including his family and close friends, would see the photograph in the magazine story.

Data Collection. After the scenes had been pretested, a number were revised and a standardized procedure for administration was adopted. A preliminary study was then conducted in which the subjects were ten extremely anti-Negro engineering students and ten very equalitarian engineering students. These subjects were selected from a group of 311 students constituting an entire engineering freshman class. In the course of the test 48 photograph releases were considered by the subject, and he could sign as many as half of this number. A difference score was derived which reflected the number of interracial scenes rejected minus the number of all-white scenes rejected.

Data Analysis. The results obtained in this preliminary study showed a strong and significant relationship between the tendency to reject posing for interracial photographs and racial attitude as determined by a self-report attitude inventory. There was relatively little overlap among the two groups of ten subjects each. Further analysis revealed the fact that there were no differences between groups in the choice of interracial and all-white scenes (1) at the least intimate level of relationship pictured and (2) when the photograph was to be used for the textbook to be published in a foreign language for use overseas. Moreover, while the other three types of use specified for the

photographs all resulted in significant differences between prejudiced and unprejudiced subjects; we did not find the step-wise increase associated with the type of use which DeFleur and Westie postulated. Because it was desirable to shorten the test, we followed the leads indicated above, eliminating the less discriminating type of scene and type of use.

d. Pilot Study B

Data Collection. A pilot study was conducted to examine the relationship between photograph release scores and racial attitude under conditions of group administration. A heterogeneous group of college-age girls served as subjects. Following the completion of the photograph release procedure these girls completed a self-report attitude inventory (Multifactor Racial Attitude Inventory) under anonymous conditions.

Data Analysis and Results. A significant correlation was obtained between photograph release scores and the attitude inventory scores with the more anti-Negro subjects rejecting a higher proportion of interracial scenes than all-white scenes.

e. Pilot Study C

Data Collection. A third pilot study was conducted to examine the feasibility of using the group form of the test with an organized group and with a college class, these being the two types of groups used in the final validation studies. A college sorority served as an example of the organized group, and a race relations class as an example of the college class.

Data Analysis and Results. In both cases the group administration procedure was carried out satisfactorily. The activity of signing the photograph release statements was regarded by all subjects, either as individuals or in groups, as highly realistic. No subject questioned the reality of the situation in the course of these pilot studies.

f. Study D

A Ph.D. dissertation concerning the photograph release procedure is currently in progress. An independent variable being manipulated in this dissertation is the presence of a Negro associate of the agent of the textbook publishing company. Under one treatment, this associate appears as a high socio-economic-educational level individual. Under a contrasting treatment, he appears as a low socio-economic-educational level person. It is expected that the presence of a Negro in one or another of these two roles will influence the decision of the subjects regarding the proportion of interracial photographs in which they agree to pose.

Data Collection. Two groups of subjects are being compared. One of these is relatively anti-Negro, falling within 1.5 to .5 standard deviations below the mean of a University of Colorado sample on the Multifactor Racial Attitude Inventory. The other is relatively equalitarian with scores on the MRAI ranging from .5 to 1.5 standard deviations above the sample mean. Attitudes of subjects were measured either in classroom testing sessions or in dormitory sessions in which students took tests for pay. In neither case was the experimenter identified in any way with the administration of the attitude inventory.

Students whose attitudes fell within the desired range were approached by letter and telephone as part of a "randomly selected" group of students being offered job opportunities in connection with the preparation of photographs by the publishing company. The experimenter served as the agent for the company and carried out the procedure of showing the scenes to be photographed and obtaining the preferences of the subjects for scenes in which they would agree to participate.

Data Analysis and Results. The study is still in progress and hence no final results are available. However, preliminary indications make it clear that the difference between groups of subjects found in earlier studies will also be found in this one. The relatively equalitarian subjects have again agreed to participate in a higher proportion of photographs involving Negroes than have the anti-Negro subjects.

g. Work Proposed

The work with the Photograph Release Test has come to a point where it is technically feasible to carry out a final validation study. This study will follow the method used in prior validation studies in this program. The test will be administered to groups of known racial attitude, ranging from pro-civil rights groups on the equalitarian end of the dimension to organized groups who oppose desegregation on the anti-Negro end of the dimension. As has been customary in other studies the work will be replicated in at least two regional areas--one in the South and one in the North.

B. Person Reaction Test

a. Background

For some years individuals studying social attitudes have recognized the need for a measure of direct reaction to the attitudinal object (e.g., a representative of a disliked social group). Such a measure is needed to supplement the usual measures which involve the respondent's reactions to a symbol representing the attitudinal object, such as a name, picture, group label, etc.

A desired characteristic of such a performance measure, in addition to the presence of a member of the attitudinal object group, is that it makes use of a "natural" rather than an experimental setting. The experimental setting invokes in most research subjects a sensitivity to the presumed values and expectations of the experimenter or the institution of which the experimenter is a member. In the case of college student subjects, it is likely that this experimental caution would modify the behavior the subject would otherwise show and mask the expected relationship between his attitude and his performance.

On the other hand, the situation chosen must be under the control of the experimenter if a standardized stimulus situation is to be presented. Moreover, the situation must be relatively simple if it is to be useable by other experimenters. For this reason compromise between the "natural" and controllable features of the test setting must be made.

b. Purpose

When working through this dilemma some years ago, I became convinced that the situation which came nearest to meeting these various requirements was that of a waiting room. The research subject can be given a purpose for his presence, that is, the job or interview or experiment waiting for him in another nearby room. If this purpose is sufficiently familiar and meaningful, the subject will have no need to question the incidental fact of his presence in the waiting room. With this as a starting point it is possible to introduce into the waiting room a variety of controlled interventions. As indicated above, one of these is the presence of a representative of the disliked social group toward which the attitude under study is held. Another is the presence of experimental confederates through whom "guided conversations" may be introduced to inform the subject of the characteristics of the representative of the disliked group, of the opinions of the confederates, etc. Various choices may be presented to the subject under these circumstances from within the waiting room (e.g., choice of seat, acceptance of food handled by the disliked individual, etc.). Others may be presented outside the waiting room (e.g., choice of one of two or more persons in the waiting room as experimental partners, co-workers, coffee break associates, etc.).

Rokeach and his associates have been working along lines similar to those described. In a recent issue of Science, Rokeach has described three studies, two involving choice of coffee break partners and a third involving willingness to work with persons selected from the experimental confederates encountered in the waiting room. In these studies, Rokeach has shown the practicality of the waiting room as a means of introducing control of experimental variables of which the research subject is unaware.

c. Pilot Study A

Data Collection. Subjects were identified in terms of a self-report attitude scale (Multifactor Racial Attitude Inventory) administered as part of a test battery in a dormitory setting. From this pool three groups of subjects were chosen, one extremely anti-Negro, one highly equalitarian and one intermediate, i.e., located close to the mean of the college student population. These students were invited individually some weeks later by a second experimenter to participate in an ESP experiment. They were paid but in addition were put under strong social pressure to appear in order to round out the requirements of a "random sample" of the student body. When they appeared for the ESP experiment they were required to wait in an adjoining waiting room equipped for one-way observation and sound recording. Waiting with the subject were two experimental confederates, one white and one Negro.

In this pilot study we explored the utility of three classes of measures. The first were the choices by the subject. Seats were arranged so that the subjects who entered the waiting room last could elect to sit either by the Negro confederate, by the white confederate, or between them. Following a period of activity in the waiting room, a second choice was made by the subject, this time of a person to participate with him as a "transmitter" in the ESP experiment. (I shall not take the time to describe all of the experimental arrangements which make these and subsequent activities believable to the subject.)

A second class of measures explored were the subject's behavior in the waiting room in relation to the two confederates: such things as the time he spent in speaking to one rather than the other, the number of questions he asked of one rather than the other, etc. In order to induce behavior of this sort the confederates were trained to conduct "guided conversations" on specified topics; these conversations draw the subject into verbal interaction with the confederates.

The third class of measures explored had to do with the affective reactions of the subject to certain information introduced into the conversations by the Negro confederate about himself. This information was chosen so as to deviate from the characteristic

expectations of anti-Negro persons. It involved representing the Negro as having a father with a Ph.D., as being embarrassed at civil rights demonstrations, as being a poor dancer, etc.

Data Analysis and Results. In general, the pilot study was successful in demonstrating the general feasibility of this experimental setting. The subjects engaged in natural conversations with the experimental confederate and made the choices posed to them without questioning the natural quality of the experience. The results with respect to choice of partner are entirely consistent with predictions from attitude. Seat choice, however, did not follow the expected pattern. Similarly, the interaction with the two confederates showed no relationship to attitude nor was it possible to determine by observation any difference in the affective reactions (as judged by comments and facial expressions) to the stereotype-discrepant information introduced by the Negro confederate.

d. Pilot Study B

A second pilot study was carried out in the 1965-66 academic year and is nearing completion. A diagnosis was made that the Negro confederate's presence in the waiting room inhibited the attitude-related behavior of the anti-Negro subjects in the first pilot study. From this we inferred that if we could remove the Negro confederate at a certain point in time and have the white confederate probe the subject, the expected antagonistic behavior would show itself. We repeated the study with this and several other minor modifications.

Data Collection. Subjects were identified and recruited as described for the first pilot study. Again the ESP experiment was used as the explanation for the subject's presence. The seat choice and partner choice items were retained and a food acceptance or rejection choice was added. The effort to observe affective reactions was continued as was the observation of differential interaction with the two confederates. The nature of the ESP experiment was changed in such a way as to make it reasonable to withdraw the Negro confederate after an initial period of three-way interaction among the subject and the two confederates. When the white confederate was alone with the subject, he used the "guided conversation" approach to introduce standardized probes regarding the subject's reaction to the stereotype-discrepant information introduced by the Negro confederate prior to his departure.

Data Analysis and Results. The findings fully support the diagnosis on which the major modification in procedure was made. With the Negro confederate absent the different types of subjects do, in fact, show markedly different behavior. As expected, the anti-Negro subjects doubt, or give derogatory explanations for, the information which the Negro confederate introduced, whereas the

equalitarian subjects accept, and give equalitarian explanations for, this information. As in the first pilot study there appears to be little observable difference in the behavior of the different types of subjects when the Negro confederate is present. Partner choice is less highly related to attitude than had been the case in the first pilot study; the reason for this is a heavy overchoice of the Negro confederate not only by the equalitarian subjects but by the anti-Negro subjects as well. We have reason to believe that this was a consequence of the programmed interviewing and probing behavior of the white confederate which had the effect of making her appear to talk about the Negro confederate behind her back. It should not be difficult to correct this impression in redoing the experiment. Acceptance or rejection of food offered by the Negro confederate was unrelated to attitude. As was the case in the first pilot study, seat choice is significantly related to attitude but in the direction opposite to prediction, i.e., anti-Negro subjects more frequently choose from three available seats the one near the Negro confederate. While we do not, as yet, understand this behavior, it has turned out to be consistent enough to warrant further study.

e. Work Proposed

In view of the outcome of these two pilot studies, I wish to continue the effort to develop the waiting room situation as a standardized performance measure of racial attitude. Since there remain minor difficulties with the procedure, it must go through at least one additional pilot study. After such a study is completed I would hope to be ready to investigate the relation of scores on the Person Reaction Test to attitude as indicated by membership in attitudinal criterion groups.

2. Measures Based Upon Interpretation of and Reactions to Incomplete or Ambiguous Stimuli

The studies being conducted in this category explore the possibility of drawing inferences from the individual's interpretation of or reactions to incomplete or ambiguous stimuli relevant to the attitudinal object. The assumption here is that when one's responses are not guided by the stimuli being responded to, they are guided by his own disposition toward the object class.

Outline

- A. Interpretation of Incomplete Scenes
- B. Sentence Completion
- C. Informational Estimates
- D. Inferential Ability

A. Interpretation of Incomplete Scenes

a. Background

A number of investigators have used ambiguous pictures as projective tests of attitudes. They share the assumption that, in the absence of unambiguous stimuli, the subject must supply from internal sources the elements needed to support a meaningful interpretation. From our preliminary review of these studies, we believe such tests are likely to be most useful if the pictures, and the questions asked about them, are designed to produce responses relevant to specific scoring assumptions. For example, Riddleberger and Motz (1957) found that criterion groups differing in attitude toward Negroes differed in their explanations of how the whites and Negroes in a set of pictures had happened to come together; subjects unfavorable toward Negroes were more likely to interpret the meetings as having occurred by chance.

b. Purpose

The approach we chose in this study is based upon the observation that persons frequently misread or distort social situations about which they have incomplete information. Attribution of unworthy motives to one or more persons in the situation is one form of such distortion. Another is the inference that one of the parties is engaged in unfriendly or even hostile behavior. Our effort has been to expose the subject to test situations similar to real-life situations in the expectation that, here too, he will make internally motivated interpretations.

In order to disguise our intent, the stimuli were presented in the form of an objective task. We told the subject that the activity was parallel to an aspect of detective work. We indicated that, given minimal evidence, some individuals are able to make more correct inferences about what people have done or are doing than are others. Paced and speeded presentation was used to further induce a task performance set.

c. Pilot Study A

Development of Materials. The preliminary form of the test contained 20 sets of sketches. Each set was designed to be shown to the subject in five stages. The first stage containing the least amount of information was the most ambiguous. As succeeding stages were presented, more and more pictorial information was given. Stage five represented the stage containing the most information while still maintaining a degree of ambiguity about the relationship between the two central characters. At each of the stages the subject was asked a series of questions about these two figures labelled A and B. One of the figures was clearly a Negro. The questions were designed to inquire into

the presumed relationship between the Negro and white figures as more information was added with the presentation of each stage.

Data Collection. The test materials were administered to 125 subjects. Some of these had self-report attitude scores reflecting strong anti-Negro attitudes, while others had scores indicating strong equalitarian views.

Data Analysis and Results. Although not enough data were collected to give stable statistical results, they were analyzed for leads to item revision. This was done picture by picture, stage by stage, and question by question. Several conclusions were reached: (1) The technique seemed promising enough to warrant the investment of more time and effort. (2) The five stage approach of gradually giving more information, yet maintaining a degree of ambiguity throughout, was a good one. (3) Some of the pictures would have to be redrawn or eliminated in order to eliminate cues that tend to elicit friendly or aggressive responses that were independent of the presence or absence of Negro figures and that were independent of the subject's level of prejudice. (4) The form of answering could be moved further in the multiple choice direction to eliminate problems of categorizing responses to open-ended questions. (5) The test could be considerably shortened.

d. Study B

Development of Materials. Based upon the conclusions drawn from the first pilot study, the test materials were revised and arranged in two parallel forms. In each form, five sets of pictures were interracial and five all white. At each of the five stages in the presentation of each scene the subject responded to the following questions in a multiple choice format:

- (1) Are A and B friends? (a) Yes (b) No
- (2) (a) A and B planned to meet
(b) A and B preferred not to meet
- (3) A feels (a) angry (or annoyed) about what B is doing
(b) happy (or pleased) about what B is doing
- (4) B feels (a) angry (or annoyed) about what A is doing
(b) happy (or pleased) about what A is doing
- (5) (a) A and B will want to meet again
(b) A and B will want to avoid meeting again

In addition, questions (in a multiple choice format) were prepared relevant to the content of the specific scene.

Data Collection. In order to determine whether or not this second version of the test was sufficiently promising to warrant investment in a criterion group study, each of the two forms was administered to 100 subjects in the Northeast and 100 in the border South. Thus, a total of 400 subjects was studied. These subjects were selected from subject pools where experience had shown that considerable variation in self-reported racial attitudes could be anticipated. Following the administration of the incomplete scenes, each subject was asked to complete the Multifactor Racial Attitude Inventory.

Data Analysis and Results. Subjects in each group varied widely in their self-described attitudes toward Negroes. Nevertheless, to our surprise the relatively favorable and relatively unfavorable subjects showed little or no consistent difference in their characterization of the incomplete scenes. While a study of individual items is still in progress, there is little ground for hoping that its results will encourage us to continue with this approach.

e. Work Proposed

Previous work with projective methods as well as observation of everyday social interaction made the approach taken in this study seem quite promising. Nevertheless, for reasons which are not yet clear, racial attitude seems not to influence the manner in which subjects supply missing information in these incomplete scenes. Unless we come to understand better the basis for this unexpected finding, we have no grounds for proceeding further in this direction.

B. Sentence Completion Questionnaire

a. Background

The PDPQ (Paired Direct and Projective Questionnaire) is a technique devised by Getzels (1951) and Getzels and Walsh (1958) for measuring attitudes. It is a sentence completion test in two parts: The first part with stubs worded in the third person ("John thinks. . .") is presented as a verbal speed test; the second part, consisting of the same stubs worded in the first person ("I think. . .") is administered after a period of time (usually about two weeks) as a measure of the respondent's own views.

The test is based on two assumptions: (1) when the subject is asked, especially under speed conditions, to describe the reaction of a hypothetical third person to a specified stimulus, the most readily available source of response is his own spontaneous reaction; (2) when he is asked his own views, especially if he is not pressed to answer quickly, he takes account of the requirements of the situation and modifies his response accordingly.

b. Purpose

The purpose of our studies in this area has been to check the assumptions underlying the use of third person sentence completions as indicators of social attitudes. In the event these results seemed hopeful, a further objective was to revise the sentence completions relating to racial attitude used by Getzels and to increase somewhat their number.

c. Study A

Development of Materials. For our first work with the PDPQ we retained Getzels' ten sentence stubs about Negroes. To these we added ten stubs for each of four other areas--internationalism, the welfare state, government control, and civil liberties--in which we believed a greater range of positions might be obtained from criterion subjects with known attitudes. In addition, in the third person form, we added fifty "filler" items, less personal in reference than those used by Getzels.

Data Collection. The PDPQ, along with other instruments, was then given to 147 northern college students: 72 from "liberal" organizations; 75 from "extreme conservative" organizations. The third person speeded form was administered at the first session; the first person form and other instruments were given at a second session about two weeks later.

Data Analysis. Shifts on responses to the incomplete sentence stubs were consistent with Getzels' hypotheses about the meaning of such responses. In every area, responses to the first person form were more in keeping with perceived norms of social acceptability

than were those on the third person form. As predicted, the discrepancy was especially great in the area of attitude toward Negroes.

In our data, third person completions and subjects' perceptions of how other people would respond were related. As a result we saw no way of choosing between two alternative hypotheses about the meaning of the third person responses: Getzels' hypothesis that they represent projections of one's own attitude, vs. the hypothesis that they represent realistic estimates of typical others.

d. Study B

Although the results of our first study did not make it possible to choose between alternative interpretations of third person sentence completions, they seemed promising enough to warrant a study of the ability of this technique to discriminate among criterion groups with known racial attitudes. Hence, we decided to make a study of this relationship.

Development of Materials. The revised forms of the PDPQ questionnaire contain 15 racial items. These items have been carefully selected from a larger pool subjected to extensive pre-testing. For the non-racial items which form the context for these 15 racial items, we decided to use items in which the subject might be deeply involved and which for this reason might capture his attention. These items dealt mostly with personal competence in a variety of situations and with a series of relationships with parents. A separate form for men and women was necessary. In order to facilitate speeded administration of the third person form, the third person items were arranged in two separate test booklets, the first containing 38 stubs, the second 37.

Data Collection. Third person and first person forms of the PDPQ, as revised, were administered to members of criterion groups in three sections of the country, 240 in the Northeast, 192 in the Rocky Mountain area and 95 in the border South. Both third person and first person scores show a strong and significant relationship with criterion group membership. For the third person form the eta's in the three regions enumerated above are .49, .43 and .76 respectively. For the first person form the eta's are .54, .57 and .82 respectively. Discrepancy scores between the third person and first person responses do not show a significant relationship with racial attitude. A paper reporting our findings on these sentence completion studies is being prepared.

e. Work Proposed

Of the 15 racial sentence completions, item validity studies are highly satisfactory for 13. Two items appear to be of questionable value and will be revised or discarded. However, aside from

these changes, it is planned to keep the present items as a satisfactory test of this type. No further use of the items is contemplated until the point arrives at which studies of the relationships of various instruments in our total program is appropriate.

C. Informational Estimates

a. Background

This approach utilizes items, referring to some social group, which either have no correct answers or are so unfamiliar that it can be assumed that few if any respondents will know the correct answers. Characteristically the investigator offers the subject alternative responses which he believes would indicate relatively favorable or relatively unfavorable attitudes. The assumption is that, when forced to make a guess on ostensibly factual questions where he has no objective basis for an answer, the subject is likely to choose the alternative most consistent with his own attitudinal disposition. Studies by Hammond (1948) of attitudes toward labor and management, of Weschler (1950) of attitude toward Russia, and of Rankin and Campbell (1955) of attitude toward Negroes, have lent support to the usefulness of this approach. More recently Harding, Schuman and Allport (personal communication) have explored the usefulness of this technique for measuring attitudes toward several minority groups: Negroes, Jews, Mexican Americans, etc. Since their work appeared to be most relevant to our own objectives, we began our efforts at the point where these investigators left off.

b. Purpose

As indicated above, our work in this area will explore ways in which apparently factual information can be used to reflect the influence of one's own attitudinal position. We start with the assumption that answers having derogatory implications will be chosen over other answers by persons with unfriendly attitudes. It will be necessary to contend with two problems: one is to avoid materials in which the derogatory alternative can be chosen on truly factual grounds; the other is to avoid presenting the subject with a situation in which his derogatory answers would accumulate to such an extent as to make him uncomfortable and suspicious about the purpose of the questions being asked.

c. Pilot Study A

Development of Materials. We added additional items to those selected from the Harding and Schuman information test, creating an initial form of 39 items. In developing these items we worked with a number of assumptions. One of these was that the prejudiced white overestimates the number of Negroes in the population. A second was that he exaggerates the tendency of the Negro to spend his income for luxuries as contrasted to investments like education having more long-range value. A third is that he subscribes to a variety of derogatory beliefs regarding cleanliness, work habits, etc., of the Negro. In many cases the items chosen are ones in which the performance of Negroes is inferior to that of whites (at least in terms of middle-class values). Our expectation, however, was that this difference would be over-emphasized by the person with unfavorable attitudes and

perhaps de-emphasized by the individual with favorable attitudes. We hoped that the fact that the items were presented in factual form would make the anti-Negro respondents somewhat freer to record derogatory views than they would be if asked to supply their own opinion on the same points.

Data Collection. The information items were administered to 153 subjects. Following its completion, the same subjects were asked to respond to the Multifactor Racial Attitude Inventory.

Data Analysis and Results. Using the scores from the Multifactor Racial Attitude Inventory as a criterion, we made item validity studies of the informational items. This led us to discard 14 of the 39 as relatively non-discriminating. A total information test score based on the remaining 25 items correlated .46 with the Multifactor Racial Attitude Inventory score. This provided a first estimate of the degree of correspondence between informational estimates and attitude and gave support for continuation of this approach.

d. Pilot Study B

Development of Materials. The item validity data from the first pilot study provided a basis not only for discarding certain item types but also for augmenting types of items which were shown to be discriminating. An additional 17 items were prepared, producing a total of 42 items for use in this second study.

Data Collection. The second version of the information test was administered to a group of 105 college students. The format of the test was identical with that of the initial test. Some changes were made in the ranges of quantitative alternative answers used in some of the items; these changes also were based on the data from the item validity study of the first test. Upon completion of the information test, the subjects answered the Multifactor Racial Attitude Inventory.

Data Analysis and Results. The data from this pilot study were also used for item analysis. The subjects were divided into upper, middle, and lower thirds based upon their Multifactor Racial Attitude Inventory scores. Frequency distributions of responses to each item were compiled for each of the three groups. These data made it possible to eliminate certain items which had badly skewed distributions and to modify the alternatives in other.

e. Pilot Study C

Development of Materials. Additional items were developed on the basis of information provided by the item analyses of the two previous versions of the test. This led to a third version containing 60 items. No change was made in the general form of the test.

Data Collection. The information test was administered to 166 subjects in the Rocky Mountain area and to 106 subjects from the border South. Following completion of the test the subjects answered the Multifactor Racial Attitude Inventory.

Data Analysis and Results. Within each area the score on the information test was correlated with the Multifactor Racial Attitude Inventory score. The coefficient obtained in the Rocky Mountain area was .35, while in the border South the coefficient was .40.

Scores on individual items were also correlated with Multifactor Racial Attitude Inventory scores. For the Rocky Mountain area 35 of the 60 items had significant correlations with the Multifactor Racial Attitude Inventory ($p < .05$ or better). In the border South the number of items with significant correlations was 29. Using these item validity data, 35 items were selected for a final version of the information test.

f. Study D

Development of Materials. As indicated above, the final version of the information test contains 35 items about Negroes. In order to make it more difficult for the subject to become aware of the cumulative impact of the derogatory characteristics he was attributing to Negroes, the test was presented as a test of information about minority groups and parallel items were constructed for Puerto Rican and American Indian groups, using the same wording and range of responses in the item alternatives.

Data Collection. The information test was administered to attitudinal criterion groups in the Rocky Mountain area and in the border South. There were 138 subjects in the Southern sample and 188 subjects in the Rocky Mountain area. There were three attitudinal criterion groups in each region: 1) subjects with strong equalitarian attitudes and an active involvement, e.g., CORE members, 2) subjects with strong equalitarian attitudes but not active involvement, e.g., students taking elective courses in intergroup relations, 3) subjects in right wing political organizations and exclusionist fraternities and sororities. After taking the information test subjects also answered the Multifactor Racial Attitude Inventory.

Data Analysis and Results. Scores based upon the Negro items in the information test are significantly related to other indicators of racial attitude. When the attitudinal criterion groups are used as the attitude indicator, the eta coefficient between information and attitude is .40 for the Rocky Mountain area and .57 for the border South. Scores based on the Puerto Rican items are also significantly related to racial attitude. Here the eta coefficients are .34 in the Rocky Mountain area and .49 in the border South. An article describing these findings is in preparation.

g. Work Proposed

Since a satisfactory version of an information test is available, no further work is proposed in this area.

D. Inferential Ability

a. Background

Searchers for indirect indicators of attitude have always been attracted to the idea that task performance might be affected when the task involved attitudinally relevant material. My efforts in this program to locate such an effect in learning and memory have, as yet, been unsuccessful. Elsewhere in this report I have described my inability to replicate several familiar studies in this area. In general, the work on the influence of attitude on task performance has been characterized by this variability of experimental results. The most likely explanation of this, I suspect, is that the variance attributable to task-related individual differences in abilities is so great as to mask the potential effect of attitude.

b. Purpose

Recently I have undertaken to work along the lines of an apparent rather than a real task. The notion is to present the respondent with an activity which he interprets as a test of his ability. But the nature of the material is such that the choice of a "correct" alternative from among those offered is not in fact possible, based upon the information available to the subject.

c. Study A

Development of Materials. The presumed task is presented to the subject as a type of thinking process described as inferential ability--the ability to make correct interpretations of related scientific facts. The subject is told, as one might assume, that some people excel in such inferences while others do less well. The work is timed, with bonuses presented for both accuracy and speed.

A reading comprehension format is followed. Each item consists of a paragraph of information. The paragraph is followed by the two interpretations. The subject's task is to judge the extent to which each interpretation is supported by the information given in the paragraph. An example of such an item follows:

From Integration of High Schools by Cassidy. ". . . the number of incidents of violence observed in high schools which are integrating in a step-fashion varies according to the degree of integration. In general, those schools which integrate by grade show few incidents of violence in the first year of integration, with an increase of 20% by the beginning of the second year. The incidence of violence continues its increase until the middle of the third year. After this peak in the third year the amount of violence decreases at a slightly faster rate

than that of the increase, until by the end of the fourth year the amount of violence is roughly equal to that observed during the initial three months of integration. . . The authors believe that the high rate of violence seen during the third year can be substantially decreased by changing the present methods of integrating schools."

- A. Since the process of integration often results in increasing trouble before stability is attained, integration should proceed slowly, carefully avoiding tension situations resulting from too much intergroup contact.
- B. Since the process of integration often results in increasing trouble before stability is attained, integration should proceed quickly, avoiding as much of the trouble occurring in the transition period as possible.

Neither of the alternatives is supported by the information in the paragraph, although upon a quick reading the information seems clearly relevant to both alternatives. Another way of saying this is that to some extent both alternatives appear to receive some support from the paragraph. The alternative interpretations are chosen in such a way that one might expect one of them to be favored by equalitarians while the other would be favored by persons with anti-Negro attitudes. Subject to confirmation by item analysis, we anticipate that alternative "B" in the above example will be favored by the equalitarians (who tend to believe in immediate school integration), and alternative "A" by the anti-Negro individuals (who tend to advocate gradualism in desegregation).

Items such as these have been mixed with items of similar form having to do with a variety of social issues and social groups.

Data Collection. A pilot study providing data for an item analysis was carried out. This item analysis led to the discovery of certain principles of item writing for this type of item. In a second pilot study the test was administered to two subgroups of students, one with equalitarian scores and the other with anti-Negro scores on the Multifactor Racial Attitude Inventory.

Data Analysis and Results. An item-by-item analysis of the difference in the way in which these two subgroups rated the alternate interpretations in Negro-content items was not encouraging. On the other hand, some items did show differences in the expected direction, making it seem worthwhile to study the technique further.

d. Work Proposed

Should it prove to be possible to identify the characteristics of items which are relatively effective in separating the two attitudinal subgroups, an additional revision of the instrument will be attempted and a further study of its relationship to attitude carried out. On the other hand, if we conclude that it is not possible to discover such differentiating characteristics among the effective and ineffective items, I will not take the instrument through this additional step.

3. Measures Based on Adequacy of Task Performance

Studies in this category approach the measurement of attitude from the point of view of its effect upon the adequacy of performance on objective tasks. Characteristically, the subject is presented with a task involving both attitudinally relevant materials and neutral materials. The inference is that a systematic difference in performance on neutral and attitudinally relevant materials reflects an attitudinal influence.

Outline

- A. Differential Memory
- B. Differential Picture Recall

A. Differential Memory Test

a. Background

Several investigators have reported differential recall of attitude-relevant statements, with subjects memorizing more quickly, and remembering longer, material that is in keeping with their own position on an issue. Jones and Kohler (1958), differentiating between "plausible" and "implausible" statements, found that subjects learned more quickly the plausible statements favoring their own position and the implausible statements favoring the opposite position. The effect was sufficiently strong to separate with no overlap the extreme thirds of the attitude continuum as measured by a self-report questionnaire.

b. Purpose

Our purpose here was first, to check the validity of the general assumption regarding the effect of attitude upon learning and memory and second, to utilize this effect as an indicator of attitude strength.

c. Study A

First, we carried out a direct replication of the original Jones-Kohler study. This was done in the South, as was the original study. We used the 12 statements developed by Jones and Kohler. These were of four types, plausible pro-integration, plausible pro-segregation, implausible pro-integration and implausible pro-segregation.

Data collection. The statements to be learned were administered to 42 subjects in a border South city--14 in each of three subgroups. The statements were read by the experimenter to the subject at a standard rate, approximating that which Jones and Kohler had used. Recall was attempted immediately following the reading of the statements. There were five trials.

One of the three subgroups was strongly pro-segregation, another was strongly pro-integration, and another was at a point midway between these two. Attitude position was determined in advance by persons not connected with the experimentation proper. Two self-report inventories, one stressing desegregation policy, the other, acceptance of interracial social relationships, were used to estimate subject's attitudes.

Data Analysis and Results. We failed to confirm the results of the Jones-Kohler study. The subjects, contrary to prediction, did not remember congenial plausible and uncongenial implausible material better than they did uncongenial plausible and congenial implausible material.

d. Study B

In addition to replicating the Jones-Kohler study we carried out a second study closely parallel to it. In this second study we used new and improved materials.

One experiment was done with 75 subjects in the border South; a second involved 24 subjects in the Northeast.

Development of Materials. We constructed a new set of items controlled for difficulty, familiarity, and affectivity of wording. These items were pre-tested on 50 northern and 50 southern college subjects. Revisions were necessary to insure that pro-integration and pro-segregation items as well as plausible and implausible items were equated in other respects.

In order to make these materials more adaptable to general use, we prepared them for group administration. The reading of the statements was paced and the items recalled were written on separate pages of answer booklets.

Data Collection. The revised materials of the second study were administered to 294 subjects in two regions of the country, the Northeast and the border South. This administration took place in classroom groups of not more than 30 subjects each. The experiment was introduced as a study in learning. The administrator timed and paced the reading of the items. As in the first study, the items were read and recalled five times. This was followed by administration of a 57-item self-report inventory of racial attitudes. In terms of scores on this inventory, three groups of 25 subjects each were selected from the pool of subjects from the border South. Two of these groups held extreme attitudes while the third was intermediate in nature. Following a similar procedure two extreme groups of 12 subjects each were selected from the subjects in the Northeast. The N was small because it was difficult to find subjects in this area representing attitudes as strongly anti-Negro as were available in the southern sample.

Data Analysis and Results. Again, we failed to confirm the Jones-Kohler finding that persons best remembered plausible statements supporting their own attitude position and implausible statements supporting the opposite position. In this study we also were unable to confirm the Levine-Murphy (1943) findings to the effect that persons remembered best materials supporting their own attitude with the element of plausibility disregarded. Jones and Kohler had also failed to find support for this idea.

The results of this study and of the Jones-Kohler replication (Study A) have been accepted for publication in the Journal of Personality and Social Psychology.

e. Study C

Partly because of our unexpected failure to confirm the Jones-Kohler findings and partly because we suspected that the Levine-Murphy type of experiment using a lengthy text rather than separate statements was more likely to reflect attitudinal influence, we decided to do a third study in this series. Our effort in this study was to parallel the Levine-Murphy experiment as closely as possible.

Development of Materials. Our objective was to present the subject with a lengthy text embodying statements supporting and statements opposing integration. To this end we adopted the format of a roundtable discussion in which different speakers voiced their opinions in sequence. From a pilot study focused on the implausibility and plausibility of a pool of potentially useable phrases, we selected 16 for the experiment. Four of these were pro-integration and relatively plausible; four were pro-integration and relatively implausible; four were plausible pro-segregation and four were implausible pro-segregation. These phrases were worked into the roundtable discussion. The discussion was tape recorded in order to pace the speed of presentation evenly for all subjects. Subjects read a transcript of the discussion while they listened to it on tape.

A scoring system was developed for use with free-recall protocols of the material remembered. Under this system three points were given for a phrase reproduced verbatim or very close to it, two points for a phrase whose meaning was reproduced in substantially correct form, and one point for a phrase which could be identified in the protocol but which was of poor quality in its reproduction. In addition, two tests were developed to check for recognition of phrases and ideas contained in the roundtable discussion. In each test 20 phrases that had appeared in the discussion were mixed with 20 that had not.

Data Collection. The experiment was carried out in five sessions spaced as evenly as possible over a period of two and one-half weeks. Sixty-eight college student subjects attended all of the five sessions. Following the fifth session these 68 subjects answered the Multifactor Racial Attitude Inventory. On the basis of their scores on this inventory we chose 22 subjects who were strongly equalitarian and 22 who ranged from moderately to strongly anti-Negro. The analysis was carried out in terms of a comparison of these two subgroups.

During the first three experimental sessions, the subjects read through once a transcript of the discussion and at the same time listened to it on tape. After a three-minute break they wrote down what they could remember of the discussion. The fourth and fifth sessions were limited to recall and recognition only. The subjects again wrote their free-recall protocols and in addition took the two recognition tests.

Data Analysis and Results. Scoring reliability for the free-recall protocols was quite high; we obtained interscorer reliability coefficients of .85 or higher.

On all three measures, scores were obtained for memory of the four types of phrases, plausible pro-integration, implausible pro-integration, plausible pro-segregation, and implausible pro-segregation. Ratio scores were developed reflecting the proportion of pro-integration material remembered to the total material remembered; in these scores plausibility of the material was disregarded. Other scores reflected the proportion of plausible pro-integration plus implausible pro-segregation material remembered to the total amount of material remembered; this is parallel to the type of score derived in Studies A and B following the Jones-Kohler paradigm.

On none of these scores did we find a difference between the equalitarian and anti-Negro subgroups. Moreover, there was no evidence of any trend toward a difference. The only clearcut outcome of the study was the finding that implausible material was remembered better by both subgroups of subjects than was plausible material. In view of the general credence given to the principle that attitude influences learning and memory, including its presentation in textbooks on introductory psychology, an article reporting the negative results of this study is being prepared for publication.

f. Work Proposed

I continue to feel that the attitude-memory effect should show itself if the proper materials are used. However, at the moment no leads more hopeful than those we have investigated are available. Hence, no more work in this area is contemplated.

B. Differential Picture Recall

a. Background

There is some evidence (Horowitz and Horowitz, 1938; Seeleman, 1940-41) that an unfavorable attitude toward a social group interferes with perceptual discrimination of members of the social group. These investigators presented photographs of a number of people from different racial groups, then asked the subjects to identify, from a larger number of photographs, those that had been presented earlier. Subjects with unfavorable attitude toward Negroes, as measured by a self-report scale, were less successful in identifying whether or not the picture of a given Negro had been included in the first presentation.

b. Work Proposed

We plan to begin with a replication of this study. Should we be successful in confirming its findings, we will use this technique or a modification of it in order to determine whether or not it will successfully differentiate between criterion groups differing in racial attitudes.

4. Measures Based Upon Judgments of Attitudinally Relevant Materials

Studies in this category ask the subject to rate attitudinally relevant statements on characteristics such as plausibility, or favorableness to the social group in question. Inferences as to attitude strength are drawn from the direction of "bias" in resulting judgments or evaluations. The presumed basis of these inferences is that judgment, being relative to some reference point, varies as a function of "anchors" established by one's own attitude.

Outline

- A. Judgments of Favorableness of Statements
- B. Judgments of Plausibility of Arguments
- C. Evaluations of Persons
- D. Prediction of Effectiveness of Programs
for Negro Progress

A. Judgments of Favorableness of Statements

a. Background

It has long been known in sensation-perception studies that judgments of objects are made in relation to some background, "anchor," or frame of reference. Hovland and Sherif (1952), applying this principle to the study of attitudes, found that criterion groups of subjects differing in attitude toward Negroes differed in their ratings of the favorableness of the items used by Hinckley in developing a scale of attitude toward the position of Negroes. While there are differences in findings and interpretations reported in subsequent studies, the principle which Hovland and Sherif formulated has received additional support from Hovland, Harvey & Sherif (1957), Prothro (1955, 1957), Weiss (1959), Manis (1960, 1961) and Upshaw (1962).

b. Purpose

Our first objective was to check Hovland and Sherif's findings, since some subsequent investigators reported failure to confirm their results. A second objective, dependent upon the outcome of the first, was to investigate ways in which the measure might be made more sensitive and/or more reliable as an indicator of attitude.

c. Study A

Development of Materials. We used 112 of the 114 items used by Hinckley in the development of his scale of attitude toward the position of Negroes. The standard Thurstone instructions to judges for sorting of items were followed.

Data Collection. Two : substudies were carried out. In the first the items were rated by 352 subjects in five criterion groups ranging from strongly equalitarian to strongly anti-Negro. In the second substudy ratings were made by 212 subjects taken largely from introductory psychology classes. Based on the self-report attitudes expressed by these later subjects, three subgroups were selected: the least prejudiced quintile (38 subjects), the middle quintile (33 subjects), the most prejudiced quintile (22 subjects).

Data Analysis and Results. A linear relationship was found between evaluations of favorableness of statements and racial attitude in the case of statements very unfavorable to Negroes and of statements with intermediate scale values (moderately unfavorable to Negroes). Our most equalitarian subject group rated these items as most unfavorable. Our most anti-Negro group rated them as most favorable and our three intermediate groups took their place between the two extremes in stepwise fashion. The findings held equally well for both of our substudies. When the items were analyzed separately to indicate which were the more susceptible to attitudinal influence, certain subgroups were found. It appeared, for example,

that two-sided or double-barreled items could be counted upon especially to reflect the attitudinal position of the rater. These types of items were increased in number in preparing materials for the second study.

d. Study B

Development of Materials. The Hinckley racial attitude items used in the first study suffer from the fact that a high proportion were so unfavorable that all subjects regardless of attitude rated them at the extreme unfavorable end of the favorableness continuum. There were correspondingly few items in which equalitarian and laudatory statements regarding Negroes were made. For these and other reasons, a new set of 106 items were constructed, carrying over the more differentiating items from the Hinckley set and adding items more favorable in nature.

Data Collection. These items were administered to subjects in three regions of the country--342 in the Northeast, 81 in the Midwest and 54 in the border South. In each region subjects were chosen to represent criterion groups differing in racial attitude.

Data Analysis and Results. Analysis of the relationship between racial attitude as determined by criterion group membership and ratings of favorableness of statements gave clear and significant results in all regions. When items were arranged in five subgroups from very unfavorable to very favorable, the influence of attitude was shown to be strong for the very unfavorable, moderately unfavorable and intermediate subgroups. Eta coefficients based upon the F ratios for these relationships ranged from .42 to .53. As was true in the first study (and as has been found by other investigators), there is either no influence of attitude or the influence of attitude is reversed for items favorable to Negroes. This same analysis was repeated in relation to attitude as determined by self-report attitude inventory. The results parallel exactly those reported for the criterion group analysis.

We computed a summated judgment score based on the favorableness ratings; in this score we included only extremely unfavorable, moderately unfavorable and intermediate items. We related this score to attitudinal group membership in each of the three geographic regions. Eta coefficients based on the F ratios are .42, .42 and .53. Within each region we also correlated the scores from the favorableness ratings and those from the self-report attitude inventory (Multifactor Racial Attitude Inventory). These correlations range from .42 to .45.

e. Study C

Studies by Upshaw (1962) and others have shown that scale values assigned to items by judges rating them for degree of favorableness are influenced by the context of the item being rated,

e.g., by the range of favorableness covered by the total group of statements. Thus, if a group of the most unfavorable items is removed from a set of statements, those statements previously rated as moderately unfavorable will, in a new rating, be assigned more unfavorable scale values. Data collection in Studies A and B above made it possible to examine the effect of context on ratings from a somewhat different point of view. While the sets of statements in Study A and Study B did not differ in the range of favorableness represented, they did differ in the proportion of unfavorable and favorable statements included. In Study A there were a relatively high proportion of unfavorable statements. In Study B the proportion of unfavorable statements was reduced and the proportion of favorable statements was increased, making for a symmetrical distribution of favorable and unfavorable statements.

Thirty items were common to the two sets of statements in Studies A and B. Subjects in the two studies were comparable in that the subjects in each study came from designated criterion groups representing different levels of racial attitude. This meant that, for the thirty critical items, the ratings of a high equalitarian subgroup (made up, for example of CORE members) in Study A could be compared with the ratings of members of the same subgroup in Study B.

Development of Materials. Thirty statements common to Studies A and B were used.

Data Collection. Ratings collected in Studies A and B on the thirty selected items were used.

Data Analysis and Results. Median scale values assigned by five attitudinal criterion groups (subjects in Study A) for thirty statements about the social position of Negroes were compared to values for the same items in a different item context assigned by other subjects from comparable attitudinal criterion groups (subjects in Study B). Findings were:

1. Scale values of attitude statements change as a result of change in context. For example, an item which read, "The Negro should have freedom but never be treated on an equal basis with the white man," was assigned scale values of 1.3, 1.6, 2.2, 3.0, and 3.4 by groups I-V respectively in Study A and values of 1.4, 2.0, 2.3, 2.5, and 1.9 by the comparable groups in Study B, resulting in shifts of +.1, +.4, +.1, -.5, and -1.5.
2. Unfavorable and favorable items are affected differently by change in context. Unfavorable items were generally rated lower (more unfavorable) in the second (symmetrical) context (Study B) than in the earlier (predominantly unfavorable) one (Study A). Favorable items were generally rated higher (more favorable) in the symmetrical context than in the earlier one.

3. Groups of raters differing in attitude react differently to change in context. The tendency to see the unfavorable items as more unfavorable in the second context increased with the unfavorableness of the raters' attitudes.

A paper describing this work (Study C) has been published (Journal of Social Psychology). No further work of this kind is proposed.

f. Work Proposed

Two papers, one describing Study A and one Study B have been published (Journal of Personality and Social Psychology). In view of the consistency of our findings, no further work on judgments of favorableness is intended for the time being. A test based upon items from the second study is now available and will be used in later work when it becomes appropriate to examine the interrelationships of various measures found to be indicative of racial attitude.

B. Judgments of Plausibility of Arguments

a. Background

To our knowledge there has been no previous study of the relationship between social attitudes and ratings of plausibility of statements about the social group which represents the attitudinal object. We came upon the possibility in the course of pilot work on new materials for a differential memory test. For this test we needed 40 statements, intended to constitute four subsets of ten items each: plausible arguments for segregation, implausible arguments for segregation, plausible arguments for integration, implausible arguments for integration. In order to check our classification of the statements, we had both northern and southern college subjects rate them for plausibility or effectiveness. While both groups of subjects clearly distinguished the items in the different subgroups on a scale of effectiveness, the average ratings by the two groups differed considerably. In particular, neither the plausible nor the implausible arguments in favor of segregation seemed effective to northern subjects. This suggested to us the possibility that ratings of effectiveness of arguments about an issue might be influenced by one's own position on the issue, and thus that such ratings might provide a measure of attitude.

b. Purpose

Our purpose here is to study the influence of attitude upon judgments of plausibility, convincingness, effectiveness, etc., of statements about the attitudinal object. If preliminary indications support the idea that this influence is strong, a second objective is to utilize such judgments as an indicator of attitude strength.

c. Study A

Development of Materials. As indicated above under Background, we prepared 20 statements supporting segregation and 20 supporting integration. These were chosen from a larger number as a result of pretest information regarding their rank order on a plausibility-implausibility continuum. Two studies have been carried out using these items. Following the first study, minor changes were made in several items.

Data Collection. A total of 232 subjects in the Northeast, Midwest and border South were used in the pilot work leading to the final form of the 40 statements used in this study. These statements were then rated by 199 subjects, 111 from the Midwest and 88 from the border South. Data from these two subsamples were analyzed separately as well as in combination. In addition to the ratings of plausibility, the subjects gave a self-report of their own racial attitudes on our Multifactor Racial Attitude Inventory.

Data Analysis and Results. Correlations between these attitude scores and scores based on the judgments of plausibility were .64 in the Midwest and .88 in the border South. For the total group the correlation was .84. A paper reporting these findings has been published (Journal of Personality and Social Psychology).

d. Study B

Development of Materials. The 40 arguments for integration and segregation used in Study A were also used in this study.

Data Collection. Ratings of plausibility were obtained from subjects in criterion groups differing in racial attitudes. A total of 534 subjects were used, 241 in the Northeast, 199 in the Rocky Mountain area and 94 in the border South.

Data Analysis and Results. As was true in the first study, a strong and significant relationship between judgments of plausibility and attitude as indicated by criterion group membership was found. Eta's representing the strength of this relationship are .63 in the Northeast, .33 in the Rocky Mountain area and .72 in the border South. In addition the results of the first study were checked by correlating judgment scores with an attitude score derived from a self-report attitude inventory. Correlations were again high, running .76 in the Northeast, .54 in the Rocky Mountain area and .78 in the border South. A paper reporting these findings has been published (Journal of Social Psychology)."

e. Pilot Study C

The statements with which we worked in Studies A and B supported either segregation or integration. It is possible that statements for or against other race-related issues might also seem more convincing to persons with favorable attitudes than to those with unfavorable attitudes and vice versa. This possibility was put to test in a study of reasons for and against interracial marriage.

In a review of the history of arguments for and against marriage across social group lines, whether these be religious, racial or national, it became clear that the emphasis given to different arguments changes over time. This suggested the possibility that such changes might be investigated by studying the arguments stressed by parents, on the one hand, and their children, on the other. In the course of following up this idea we carried out the first stages of what will be a full scale study of the relationship between racial attitude and ratings of effectiveness of arguments for and against interracial marriage.

Development of Materials. Based upon our review of the literature we prepared twenty arguments against interracial marriage and

twenty for interracial marriage. An example of an argument against interracial marriage is as follows: "Each race has its own culture, its own heritage, and its own habits; these are best preserved when the races are not mixed." An example of an argument for interracial marriage is as follows: "If interracial marriages were to increase in the United States, we could more effectively lead the new nations of Africa toward democracy." The arguments on both sides of the issue vary considerably in degree of acceptability ranging from quite extreme arguments which relatively few people will endorse to others which are acceptable to a large number.

Data Collection. The cooperation of 27 families was enlisted in the study. In each family we studied the mother and father and a college-age student. Members of the family made their ratings independently on a scale ranging from very effective to very ineffective. After the arguments had been rated the respondent was asked to indicate his own opinion on intermarriage on a seven-point scale ranging from very strongly opposed to very strongly in favor.

Data Analysis and Results. A total score was developed for the ratings of the forty arguments. High, or favorable, scores were obtained for rating pro-intermarriage arguments as effective and anti-intermarriage as ineffective. When we correlated this score with a score based upon the self-rating of attitude regarding intermarriage, the correlation coefficient was .67 for the 27 students and .74 for 49 parents.

f. Work Proposed

The work on judgments of favorableness of statements has led to a satisfactory instrument in this area. Similarly, the work on judgments of plausibility of arguments has led to a satisfactory instrument. For reasons which are not entirely clear the relationship between racial attitude and judgments of plausibility of arguments is consistently higher than the relationship between racial attitude and judgments of favorableness of statements. This has suggested the possibility of extending the study of judgments of plausibility or effectiveness to topics other than integration-segregation. Support for the value of such a step was obtained in a pilot study (Study C above) of ratings of arguments for and against intermarriage. During 1966-67 we will extend this work by studying the relationship between such ratings and racial attitude as indicated by membership in attitudinal criterion groups.

C. Evaluation of Persons

a. Background

A number of previous investigators have used pictures of members of a social group in attempting to develop an indirect measure of social attitude. Among these are Horowitz and Horowitz (1938) and Seeleman (1940). However, in neither case has the picture been used as one of several sources of information on the basis of which an evaluation of the person portrayed is made. Hence, there is no literature directly relevant to this part of our work.

b. Purpose

We began here with the observation that persons are evaluated and accepted into social relationships to some extent in terms of their achievement and personal characteristics, but also to some extent in terms of their group membership. Often this process is unconscious and would be denied by the evaluator. Our purpose was to develop materials which would allow us to study the strength of this tendency in relation to strength of attitude toward the social group under consideration. It seemed reasonable to assume that the phenomenon would be most likely to occur when the subject had reason to think that his evaluations were being made primarily on the basis of socially desirable characteristics such as responsibility, ambition, cooperation, &c., and could assume that photographs were intended to supply him with information regarding the physical characteristics of the person he was judging.

Moreover, as is true with other measures, we assume that a subject might be put off guard against social desirability considerations if he were led to believe that the evaluation task was a realistic one, i.e., that persons with the responsibility for employing people often face the necessity for making accurate judgments of others based upon the type of information being provided in the test situation. This we hoped would give the subject a set to perform the task as well as possible and relieve him of the social need to appear "unprejudiced."

c. Study A

Development of Materials. We created personality descriptions by systematically varying four arbitrarily chosen variables. The variables were: (1) occupation, (2) sociability, (3) dependability, and (4) ambitiousness. We used only high and low extremes of each variable. This generated 16 personality descriptions, ranging from a description where all the variables were high, through various combinations to one where all the variables were low. Three sets of these personality descriptions were constructed, giving us "trios" of descriptions that should be equivalent across all variables. One of the trio of descriptions was accompanied by

a photograph of a Negro, another by a photograph of a Japanese American and the third by a photograph of a white person. If the personality descriptions are equivalent, any differences in the assessments of the personalities within each trio should be a function of the accompanying photograph.

Our first task was to equate the members of each trio of descriptions. We decided to have evaluations made both in terms of social acceptance as indicated by social distance items, and in terms of adjective ratings of the sort used in the semantic differential. Accordingly, two rating forms for each personality description were developed. The semantic differential version contained nine adjectives loading on the evaluative factor, two adjectives loading on the potency factor, and two adjectives loading on the activity factor. The social distance version contained 12 social distance items.

Photographs were taken of persons posed against a grid showing height and breadth. Our hope was that this would give the impression that the photograph was an identification photograph giving information about the individual's height and weight. Two photographs are obtained of each individual; a standing full face picture and a standing profile.

Data Collection. The semantic differential form (without photographs) was given to 101 students enrolled in an introductory psychology course. The social distance version (without photographs) was given to 102 students enrolled in the same course.

Data Analysis and Results. Means and standard deviations for each personality description were obtained on each adjective and social distance item. Means and standard deviations were also obtained for each of the three factors of the semantic differential and for the total of the 12 social distance items. The results clearly show that the ratings of the person described are strongly influenced by the number of factors that are "high" in the personality sketch. Reactions toward different members of the trios we created were very similar. However, differences were found in some cases; here we attempted revision in order to increase similarity within the trio. Subsequent ratings by 75 new subjects indicated that these revisions had been successful.

Another aspect of this preliminary analysis was directed to the selection of items from the pool of social distance and semantic differential items with which we started. We correlated the evaluative, potency, and activity mean values obtained on the semantic differential version with the mean social distance values obtained for the identical descriptions. This resulted in Pearson correlation coefficients of: .93 between social distance and the evaluative factor; .59 between social distance and potency; .91 between social distance and activity. This result would indicate a fair amount of interchangeability between social distance items and semantic differential adjectives.

Hence, ignoring the semantic differential factors, we selected the five adjective pairs that seemed to discriminate best between the relatively favorable and relatively unfavorable personalities we had sketched. Using the same criterion we selected six social distance items. The final form of the test thus requires ratings of each person on eleven items.

d. Study B

Data Collection. The test with photographs attached to the personality descriptions was now administered to 77 subjects in a preliminary study of its promise. These same subjects recorded their self-report attitudes on our Multifactor Racial Attitude Inventory.

Data Analysis and Results. Difference scores for each trio of persons rated were obtained for the semantic differential adjectives, the social distance items and a score based on the total item set. Thus, for the trio of persons having personality descriptions made up of four unfavorable traits a difference score reflecting the evaluation of the white and the Negro is available. Similarly, a difference score for the white and the Japanese American and one for the Negro and the Japanese American were obtained. Each of the difference scores was correlated with the attitude score from the Multifactor Racial Attitude Inventory.

When one considers only the relatively favorable personality sketches, the difference in the rating of equated Negro and white sketches is not only marked, but highly correlated with the attitude score. The correlations are in the area of .40 to .70; the median is .50. This, of course, is in line with our expectation in developing this instrument. To our surprise, however, the results are just as clear when one considers the difference scores in the rating of the Negro and the Japanese American. Here again the Negro is rated sufficiently lower by the anti-Negro subject to give rise to a strong correlation with the self-reported attitude. When we examined the difference scores for the white and Japanese American sketches, few differences are found, and as a result, there is little or no correlation with attitude scores.

However, when one looks at the difference scores based on trios of persons with predominantly unfavorable attributes, the picture changes. Correlations with self-reported attitude for such difference scores are low (.02 to .24). For persons with descriptions half favorable and half unfavorable the correlations are intermediate and variable in size, i.e., they range from .00 to .58. It seemed quite clear that for the unfavorable sketches we are dealing with a "ceiling" effect. For these sketches the

ratings are too low for each of the three ethnic groups to give much room for differences to arise between the evaluations.

e. Study C

Development of Materials. A final form of the Evaluation of Persons Test emphasizing favorable personality sketches was prepared. This step was based on the findings of the preceding study in which Negro-white difference scores based on favorable sketches were found to correlate with attitude whereas similar scores based on unfavorable sketches did not. Enough unfavorable sketches were retained in the test, however, to maintain the same range of personality descriptions as had been present in earlier versions.

Data Collection. The test was administered to attitudinal criterion groups in two sections of the country, 138 subjects in the border South and 188 subjects in the Rocky Mountain area. After completing the Evaluation of Persons Test, the subjects answered the Multifactor Racial Attitude Inventory.

Data Analysis and Results. Results showed a strong relationship between anti-Negro attitude and the degree to which Negro sketches are rated more unfavorably than matched white sketches. This finding held not only for a total score on the Evaluation of Persons Test but also for two subscores, one based on social distance ratings and the other on adjectives of the semantic differential type. The eta coefficients between attitude as measured by membership in the criterion groups and total scores on the Evaluation of Persons Test are .44 for the Rocky Mountain area and .52 for the border South.

To some extent the same results are found when scores are derived reflecting the extent to which the Negro sketches are rated lower than the Japanese sketches. Here the eta coefficients for the total score against attitude are .37 for the Rocky Mountain area and .40 for the border South. An article describing the results of this study is being prepared for publication.

f. Work Proposed

A satisfactory form of this test is available. No further work on it is anticipated.

D. Prediction of Effectiveness of Programs for Negro Progress

a. Background

In the course of a study directed at another objective, subjects were asked to predict the probable degree of racial equality in a nation characterized by a specified level of educational opportunity for Negroes plus a specified, but different, level of legislated assurance of equal opportunity in employment and housing. It became clear that students differed greatly in the extent to which they based their prediction of racial progress upon one or the other of these two premises. This is similar to other differences of opinion, regarding the best way to improve the lot of the Negro citizen. Casual observation of every day debate about racial problems suggests that relatively anti-Negro individuals tend to favor approaches which emphasize Negro self-improvement, while equalitarians tend to stress programs aimed at changes in society.

b. Work Proposed

As yet no studies have been planned in this area. When time and resources permit we will begin to compile a list of contending points of view regarding promising avenues for enhancement of Negro progress. With these in hand we will be in a position to prepare a test in which contending views are pitted against each other in predicting the likelihood of Negro progress.

5. Measures Based on Choice of Classificatory Principles

Our studies in this category focus on the extent to which the attitudinal object figures prominently in the subject's organization of his environment, that is, its salience for him. Inferences are drawn from the individual's selection of one from a number of possible characteristics as a basis for organizing or grouping objects. The choice of this alternative over others as a grouping principle is assumed to indicate that the characteristic in question is significant or salient in the individual's organization of experience.

Outline

- A. Verbal Clustering
- B. Picture Classification

A. Verbal Clustering

a. Background

A number of studies of verbal behavior have found that when words drawn from various categories are presented in random order, subjects tend to recall them in clusters, with several words representing a given category being recalled together even though they were not next to each other in the list presented. We know of no attempt to use this technique in the study of attitudes.

b. Work Proposed

We hope to develop a measure of clustering in recall of objects for which alternative classificatory principles are available, as an indication of the salience for the subject of various characteristics of the objects. While we do not as yet know what verbal stimuli we will use, the following will illustrate the approach: the subject would be presented, in random order, with names of well-known people from several different occupational categories--e.g., four baseball players, four musicians, four political figures, four actors; one name in each category would be that of a Negro. The measure of tendency to classify in terms of race would be the extent to which names of Negroes are grouped together in recall.

B. Picture Classification

a. Background

This technique requires the subject to select which of several objects "belong together," when alternative bases for grouping are available. An example is the "categories test" developed by Horowitz and Horowitz (1938) to assess the relative strengths of race, sex, age, and socio-economic categories. In their test, five pictures are mounted on a page, and subjects are asked which one does not belong. A page might contain pictures of three white boys, one white girl, and one Negro boy. If the subject replies that the white girl does not belong, this is taken to mean that for him sex is a more important category than race; if he replies that the Negro boy does not belong, the interpretation is that race is a more important category for him than sex.

b. Work Proposed

Selection or development of appropriate pictures, probably introducing other characteristics in addition to those used by Horowitz and Horowitz. Administration of the test to subjects from criterion groups with known attitudes.

To the extent that the subject is aware of the true purpose of either of the above tests, the desire to give socially acceptable responses may confound the results, since some subjects may feel that classifying people in terms of social group membership is disapproved. In order to make the concern with the attitudinal object less apparent, both tests would include some stimuli irrelevant to social group membership. The measures would be presented as tests of memory (verbal clustering) and of intelligence (picture classification), in the expectation that under these conditions concern with social approval would lead simply to a desire to perform the task as well as possible rather than to appear "unprejudiced."

6. Measures Based Upon Perceptual Responses

Studies in this category proceed from the phenomena of fusion and rivalry in perception. Characteristically we are limited to a single visual percept or a single auditory percept at one point in time. Stimuli are fused to produce such a percept. When fusion is for some reason not possible, certain of the stimuli dominate the percept while others are suppressed. In the latter case there is often an oscillation of percepts. Prior work making use of this principle has been limited largely to the visual area where it has taken advantage of the possibility of presenting different sets of stimuli to the two eyes. Provided that certain technical problems can be dealt with, such as eye dominance in the case of binocular rivalry, it is reasonable to assume that mediating processes in the central nervous system will influence the outcome of the rivalry of stimuli furnished the two eyes or the two ears. Social attitudes may be found to constitute one such mediating process. If so, the outcome of binocular rivalry utilizing attitudinally relevant materials may be employed as an attitude indicator.

Outline

- A. Binocular Rivalry
- B. Dichotic Listening

A. Binocular Rivalry

a. Background

Based on the pioneering work of Engel (1956), several investigators (Bagby, 1957; Pettigrew et al., 1958) have reported that when a pair of attitude-related stimuli are presented to subjects under conditions of binocular rivalry, the subject's attitude influences which stimulus becomes dominant.

b. Purpose

Our studies in this area have the primary purpose of determining whether the resolution of two stimuli presented stereoscopically is influenced by relevant attitudes. If this turns out to be the case, we would undertake to develop a standardized test for racial attitude utilizing this principle.

c. Pilot Studies

Because of the numerous methodological problems encountered in work with binocular rivalry we found it necessary to carry out six pilot studies in which we tested approximately 120 subjects. We have dealt with four classes of problems. These are described below together with the solutions at which we arrived. The four problem classes are: 1) equipment, 2) eye dominance, 3) selection and preparation of stimuli and 4) ambiguity of report of the percept experienced.

(1) Equipment. While early work in binocular rivalry utilized the Engel stereoscope, Engel suggested the use of the troposcope. Recent investigations by Purcell and Clifford (1964) have used this instrument. The troposcope has three principal advantages over the stereoscope: a) it provides for better accommodation to the ocular characteristics of different individuals, b) it provides for finer control for obtaining fusion and c) it permits independent control of the intensity of illumination to each eye.

In our work we discovered a need for two additional modifications. First, it was desirable that subjects not know they were viewing two slides. We wanted to encourage them to experience the content of only one of the two slides and, conversely, hoped to discourage the formation of a percept fusing aspects of both. Accordingly, we constructed a large screen which fit over the troposcope in such a way as to conceal from the subject the fact that the experimenter was inserting two slides rather than one into the troposcope chambers.

The second modification grew out of a need to control the exposure time for the stimuli. We wished to do this for the same reasons that led us to construct the screen, i.e., to encourage the formation of a single percept without fusion or without oscillation

from the content of one slide to that of another. A short exposure time helps to accomplish this objective. Accordingly, we attached an interval timer to provide control of the onset and termination of the light exposing the stimuli. However, as we varied the intensity of the two lights illuminating the separate chambers, we observed that a light at low intensity had a greater lag in reaching full brightness; this meant that the stimulus exposed by the brighter light was seen before the one exposed by the dimmer light. This led to the addition of a second interval timer, permitting the independent timing of two lights in such a way as to eliminate this problem.

(2) Eye Dominance. For most individuals one eye or the other is sufficiently dominant to control which of two stimuli is seen when one is presented to one eye and one to the other. Previous investigators (e.g., Purcell and Clifford, 1964; Tompkins, 1964) have attempted to deal with this question through tests of visual acuity. They found, however, that even when both eyes tested at the same level of visual acuity on an instrument such as the Bausch and Lomb Orthorater, one eye was likely to be dominant in binocular perception.

If one eye is strongly dominant for a subject, he will see only that member of a pair of stimuli which is presented to the dominant eye. For such a subject there is, in effect, little or nothing to work with from the point of view of resolution of binocular rivalry. In subjects where dominance is present, but not so extreme, the experimenter can approach the problem by alternating which member of the stimulus pair is presented to the dominant eye, e.g., if the pair can be presented more than once the arrangement of the slides will be reversed in the second presentation. However, this solution is of relatively little value, since the experimenter can never be sure how much his subject has been influenced in his percept by the content of the slides and how much by the extent of his eye dominance. Hence, if the phenomena of binocular rivalry are to apply to more than a few people, some means of controlling eye dominance must be found.

The basic approach used in our work, and by others, is to regulate the intensity of illumination to each eye separately, providing lower illumination to the dominant eye. Ideally, one lowers illumination in the dominant eye to the point where neutral stimuli are seen equally often by the dominant and the non-dominant eye. Our first efforts to achieve equidominance in subjects were made in this manner, using pairs of stimuli composed of two-digit numbers, a technique suggested by Izard (1962). In this test, illumination was adjusted for the two eyes separately until a point was reached after which, for 10 trials, the subject reported one of the two-digit numbers half of the time with each eye or until he reported numbers containing one-digit from the left and other from the right.

Using this technique it is possible to bring the great majority of subjects to the point of equidominance. However, we soon discovered that equidominance was not a stable state. When eye dominance

was rechecked after exposing experimental stimuli, it was not unusual to find that in two-thirds to three-fourths of the subjects one of the two eyes was again dominant. Sometimes it would be the previously dominant eye, at other times it would be the previously non-dominant eye. We also learned that equidominance established under one level of illumination did not necessarily hold at another level. We came to suspect, in addition, that equidominance established on one type of stimuli either did not hold at all, or did not hold for long, for stimuli quite different in character.

The first consequence of these observations was a procedure for checking eye dominance with material very similar to that to be used in our experimental slides. For our eye dominance test we prepared pairs of slides each containing one of a pair of similar words. The words differ in only one letter, e.g., wild and will. The two words are printed on the forehead of a photograph of a face. (Experimental word pairs to be described later are also presented in this way.)

The second consequence for our procedure was the development of a mid-experiment recheck for equidominance. First, a subject is brought to equidominance at the beginning of the experiment. He is then shown 12 experimental stimulus pairs, after which he is rechecked for eye dominance and, if necessary, brought to equidominance again. Indications from our pilot studies show that this second equidominance adjustment is more stable than the first. Under this procedure rechecks of eye dominance at the end of the experiment show only a few subjects for whom one eye again has become dominant.

(3) Selection and Preparation of Stimuli. Binocular rivalry is enhanced when the two stimuli presented to the eyes have overlapping contours. In order to objectify as much as possible the problem of determining the percept formed by the subject, we constructed pairs of stimuli in such a way that it would be clear from subject's response which of the two had been dominant. Thus, for example, in response to, "What did you see?" or "What's happening?", the subject could respond with one of two numbers, one of two words, or a description of one of two scenes differing only in a single meaningful characteristic (e.g., man pointing gun vs. man pointing finger).

It was, of course, necessary for the stimuli to differ in some way that could be meaningfully related to attitude toward Negroes. We decided to experiment with several types of stimulus pairs which seemed to meet this requirement. One of these involved the use of words differing in one letter only, such as "bad" and "bag." The words chosen were matched according to frequency of usage (Thorndike-Lorge), and were pre-tested for equivalence in the troposcope. Each of the two words is placed at the same spot on the forehead of one of a pair of photographs of a face. Thus the two slides when presented are of the same face but each carries one of the pair of words. Our hypothesis is that when such a pair is presented on the photograph of a white face, they will be seen

with equal frequency by anti-Negro subjects, but when presented on the forehead of a Negro face, the word with derogatory connotations (in this case "bad") will be seen.

A second type of stimulus pair involved photographs of a single person engaged in some type of activity. Again, the same person is presented to both eyes. This time, however, one aspect of the photograph differs in such a way as to suggest a different activity. For example, a hand in one case carries a screwdriver and in the other case a knife. In choosing objects like the screwdriver and knife, care is taken to see that they overlap in contour as much as possible. In choosing objects which imply different activity by the person photographed, we had several hypotheses. One of these involved association of threat or danger with Negroes; another involved the assumption of uncontrolled or irresponsible behavior. Again, comparable pairs of Negro slides and white slides have been constructed.

The third type of stimulus pair portrays social interaction between Negroes and whites. A parallel pair of slides presents a similar activity involving whites only. To illustrate, one such pair of slides includes one in which a Negro male hands a white female a small package. In the second slide of the pair the identical Negro male holds the hand of the white female. Our hypothesis in constructing stimulus pairs of this sort was that anti-Negro subjects would be motivated to see the alternative in which the relationship between the Negro and white participants was more distant and less intimate.

We learned that the subjects often were not aware of the critical area of the photograph in which we were interested unless that particular area (i.e., the hands) was the photographic highlight of the slide pair. Thus, in the illustration above, the distinction between handing over a package and hand-holding became evident to the subjects only when we magnified the photograph to show only the area in which the hands were the central feature.

At the beginning of our work we had assumed that we could present the same stimulus pair, (e.g., the screwdriver and the knife) on two occasions--once associated with a Negro and a second time associated with a white. This turned out to be impossible because of the strong influence exerted upon the formation of a percept by recent memory. If one member of a pair of slides was seen on the first showing of the pair it was almost certain to be seen again on the second. This made it necessary for us to shift to the use of matching slide pairs which would be similar in diagnostic meaning. Thus, in one slide pair involving a white man and white woman, one slide shows an affectionate act while the other shows an aggressive act. In a matching slide pair involving a Negro man and white woman, a slide showing an affectionate act is again matched with

one showing an aggressive act. While the assumption that these two slide pairs are equivalent is a risky one, once we had discovered the memory problem we had no alternative to this course of action.

(4) Ambiguity of Report of the Percept Experienced. As the material used in the slide pairs becomes more complex it becomes more and more of a problem to determine from the subject's verbal report what it is that he has seen. The subject's answer to the request to "Tell us what you saw.", very often dealt with aspects of the photograph in which the experimenter was not interested. We could not, of course, ask questions directly dealing with the crucial difference between the slide pairs, such as "Was it a gun or was it a screwdriver?", since we had not let the subject know that he was being shown two pictures rather than one.

Our first effort to deal with this difficulty involved a set of standardized questions such as "How many people were involved?", "What objects, if any, were in the picture?", etc. While this represented an improvement over the free report procedure, it still left us with too high a proportion of ambiguous answers. We came finally to use a checklist of one-sentence descriptions including a number of misleads; the checklist contained 27 entries and was presented to the subject after he viewed each slide pair.

Another approach to improving clarity of report of what the subject saw is to give more than one exposure of a slide pair. This is necessary only for slides containing the more complex scenes. Four exposures, each of .5 seconds in duration, is sufficient for almost all subjects to arrive at a clear report of what he has seen.

d. Study A

Our objective in this study was to present the stimulus materials we had prepared to two groups of subjects differing in racial attitude. In line with the theory behind our exploration of binocular rivalry as an attitude indicator, we expected to find the following. First, we anticipated that anti-Negro subjects would tend to perceive words with negative connotations rather than neutral words when a negative-neutral pair was presented against the background of a Negro face, and that the reverse would be true when a similar stimulus pair was presented against the background of a white face. We anticipated that the equalitarian subjects would see both negative and neutral words but without relation to the racial context in which they occurred. Second, we anticipated that, in slide pairs contrasting activities of a derogatory and neutral nature, anti-Negro subjects would tend to perceive the activity with an unfavorable connotation when a Negro was involved and the activity with a favorable or neutral connotation when whites were involved. We assumed there would be no such differences when equalitarians viewed these pairs of scenes.

Apparatus. We presented the stimulus pairs in a troposcope equipped for independent illumination of the two slide chambers. The bulbs in the chambers were activated by interval timers which controlled separately their onset and termination. A screen shielded the subject from the experimenter, concealing from him the fact that he was viewing two pictures rather than one.

Development of Materials. Sixteen of the slide pairs contained words, half of them against a background of Negro faces and half against a background of white faces. These words differed only in a single letter, one word being neutral while the other carried a derogatory connotation. An example of such a pair is "trunk - drunk." Ten of the slide pairs were of scenes, half involving Negroes, half involving whites. The activity pictured on one slide in each pair had derogatory implications while the activity in the other scene was neutral. An example is a person pointing a gun and a person pointing a finger.

Data Collection. There were two groups of 14 subjects each. One was equalitarian, consisting, in part, of members of groups working for desegregation, and, in part, of persons who obtained strongly favorable attitude scores on an attitude inventory. A second group was anti-Negro, consisting, in part, of members of a "radical right" student group and, in part, of persons having strongly unfavorable attitude scores on an attitude inventory. Three subjects from each group did not meet criteria of maintaining equidominance in the experiment and were eliminated. Hence, the analysis was based upon 11 subjects in each group.

For each subject the illumination in the troposcope was adjusted so that the subject saw half of a group of 10 test slides with each eye, (i.e., a condition of equidominance). The subject was then shown half of the experimental slide pairs. The word pairs were exposed once each for .5 seconds. The scene pairs were exposed three times in succession for .5 seconds each time. On the word pairs the subject responded by announcing the word he saw. On the scene pairs he responded by checking what he saw on a checklist of 27 one-sentence descriptions. The experimenter then checked the subject for eye dominance, and, if he did not reach a criterion of at least a 6 - 4 split on the test slides, adjusted the troposcope to again bring him to equidominance. The remainder of the experimental slides were then presented. A final check for eye dominance was carried out.

Data Analysis and Results. The word pair stimuli were scored in such a way that a high (or favorable) score was obtained for seeing more positive words against a Negro-face background than against a white-face background. There were no differences in the perceptions reported by the anti-Negro and equalitarian groups. Both groups saw significantly more positive words against the background of a Negro-face than against a white-face background ($p < .01$).

The scene pair stimuli were scored in such a way that high scores were earned for seeing activities with positive connotations where Negroes are involved. Again there were no differences between the equalitarian and anti-Negro groups in their perceptions. A difference of some interest did occur, namely, that the equalitarian subjects saw more activities with positive connotations regardless of whether whites or Negroes were pictured in the scene. There is some reason to think that this finding might be related to others in which certain personality types have been shown to see activities with positive interpersonal affect more frequently than activities with negative affect.

e. Work Proposed

The research literature on resolution of binocular rivalry in relation to dispositional characteristics, although it is full of contradiction and uncertainty, encouraged us to explore this phenomenon as a potential indicator of social attitude. The results of this exploration have been negative. Unfortunately, we can be sure neither that methodological difficulties have been satisfactorily resolved nor that salutary choices of stimulus materials have been made. Nevertheless, since no leads to new work with a greater potential of success are available, I intend for the time being to discontinue this line of research.

B. Dichotic Listening

The principle that a subject's attitudinal disposition might mediate the resolution of two stimuli into a single percept applies as well to the case in which the stimuli are presented to the ears as to the eyes. The technique of dichotic listening is one in which stimuli are presented simultaneously to the two ears by the means of a dual-track tape recorder. Stimuli presented to the two ears above a certain intensity level are both heard. There is some ground for believing that if the intensity level is reduced, only one stimulus will control the auditory percept. I hope to explore this possibility at some point in the future.

7. Measures Based Upon Involuntary Physiological Responses

A number of investigators have explored the possibility that physiological reactions might serve as indicators of social attitudes. Their work has shared the assumption that the magnitude of the physiological reaction is directly related to intensity of feeling; thus, the greater the physiological response, the stronger or more extreme the attitude is presumed to be. There are problems, however, in inferring the nature or direction of attitude from a physiological response. Most measures of physiological reaction give direct indication only of the extent of arousal; they do not reveal whether the corresponding emotion is pleasurable or unpleasurable. There would seem to be two approaches to this difficulty. First, if a bi-directional indicator of autonomic neural activity were available, it would provide a basis for inferences about the direction of attitude. Recent work with pupillary constriction and dilation offers some hope of developing such an indicator. Second, if, through conditioning, a differential physiological response (present vs. absent) to stimuli differing in evaluative meaning could be developed, this might open the way to studies of attitude utilizing the phenomenon of semantic generalization.

Outline

- A. Pupillary Change
- B. Generalization of Conditioned Evaluative Responses

A. Pupillary Change

a. Background

Hess (1965) states that stimuli which arouse a feeling of pleasantness and liking result in pupillary dilation while stimulation accompanied by a feeling of unpleasantness and disliking results in constriction of the pupil. If Hess is correct, then the pupillary reaction might well be useful in the measurement of social attitudes. Because of its bi-directional character it would have a great advantage over phenomena like the GSR and heart rate which respond unidirectionally to both pleasant and unpleasant stimuli.

However, according to Loewenfeld (1965), it is the intensity and felt suddenness of the emotion and the general state of nervous system arousal which determine the extent of pupil size change and not the content of the emotion. In her critique of Hess' work with visual stimuli Loewenfeld suggested that the differences in pupil reaction, particularly those involving constriction, which Hess interprets as affect-related, may instead have been the result of light reflexive effects.

b. Purpose

In general the purpose of our work in this area is to follow up the leads which the work of Hess has provided. The most critical objective, of course, is to determine whether his bi-directional findings can be replicated. If so, we wish to determine whether the unpleasant affect presumably associated with those stimuli which arouses derogatory attitudes will produce pupillary constriction rather than the dilation which ophthalmologists believe to be associated with all types of affective arousal. We would have little interest in pupillary change if the claim for its bi-directional character is not substantiated. If Loewenfeld is correct in insisting that the pupil always dilates in response to emotional stimuli there would be no advantage to working with pupillary change rather than with other physiological indicators. In fact, such a choice would incur disadvantages, since the technical problems associated with the latter are much better known than is the case with pupillary change.

c. Pilot Study A

In this first pilot study our aim was to develop familiarity with pupil photography and to explore the possibility of detecting attitudinal differences through the phenomena of pupillary change. We felt it wise to use the apparatus Hess had developed. Moreover, it seemed sensible to use stimuli which should arouse strong emotion and two groups of subjects with strongly contrasting attitudes.

Apparatus. The basic recording device was a photo-pupillograph constructed in our laboratory. It is essentially identical to Hess' pupillograph (see illustration in Hess, 1965, p. 48). The frame is a light-tight box 55 cm. high, 45 cm. wide and 80 cm. long. A subject faces into a rubber-lined opening on one end and peers through a 40 x 40 cm. opening at the opposite end. A front surface mirror is mounted directly in front of and 12 degrees below the subject's left eye. It reflects the image of the eye to a 16 mm. Bolex reflex motion picture camera mounted on the outside of the box 90 degrees to the subject's line of sight. The camera records two frames per second at an exposure speed of 0.18 seconds. A 25 watt decorative red bulb in a brushed aluminum reflector is positioned 20 cm. in front of and below the face piece in order to illuminate the eye and provide a light source for the high speed infra-red 16 mm. recording film (Kodak HIR 430).

The pupillograph is positioned on a 30" high table and may be adjusted vertically to the eye level of the seated subject. The subject's end of the box is indented so that he may fold his arms and support his body comfortably while looking into the apparatus.

An experimenter has access to camera focusing and lens aperture adjustments through a hinged lid on the apparatus. On the camera side of the pupillograph are silent, lever-action switches to control the synchronous camera drive motor, the auxillary focusing light, the infra-red light source, and a 10 sec. synchronous timer which activates the slide-changing mechanism in the 35 mm. stimulus projector. When the apparatus is running, a low level hum and slightly audible clicking sound may be heard from the camera drive assembly.

A 35 mm. Bell and Howell 935 slide projector is positioned on the tape and to the rear of the pupillograph. It projects forward (i.e., in the direction of the subject's line of sight) to a white matt screen 3.6 meters from the subject's face. The projector was modified by placing an opaque plastic washer in front of the magnifying lens. The washer has a $\frac{1}{2}$ " hole. This modification considerably reduced the overall intensity of the projected image. Projected in a dark room, a blank slide (maximum illumination) reflected 15.8 units of light as measured on a Honeywell Pentax spot photometer positioned in the face piece of the pupillograph where the subject's left eye would be.

Pictorial Stimuli. The attitude-related stimuli were 16 photographs made into 35 mm. slides. In addition, a non-attitudinal "control" slide was used. This latter picture was intended to provide a relatively neutral, uninteresting control level of stimulation.

The slides were processed in such a way as to make them nearly equivalent in over-all light intensity. Further, each slide met Hess' standard tolerance for bright-dark light contrasts (see Study B, to follow).

Except for one posed scene, the pictures were all taken from Ebony, a popular Negro weekly magazine. The pictures showed Negroes and whites in various social, work, and leisure situations, e.g., an interracial group of civil rights marchers, a Negro man showing his son a baseball, an older white man being cared for by a female Negro physician, a Negro boy and white girl talking on campus, a white girl and a Negro girl eating dinner together, a white woman seated and a very dark Negro man behind her with his hand on her shoulder. These 16 pictures were among a group of 40 photographs which earlier had been shown to two anti-Negro persons and two equalitarians. The 16 pictures chosen were ones which evoked the greatest difference in degree of dislike from the anti-Negro and equalitarian persons.

Data Collection. Nineteen subjects were tested. Twelve were known to have essentially equalitarian attitudes toward Negroes. Of the twelve, two were Negroes, six had at some time been identified with the civil rights movement (two of the six had been jailed for these activities) and four were known by the investigator to hold equalitarian views. Of the twelve, half were males. Seven subjects were known to have strong anti-Negro attitudes. Of these, three were male and four female. They were chosen on the basis of their scores on a self-report attitude inventory (Multifactor Racial Attitude Inventory).

Hess' (1965) technique was followed. The subject looked through the pupillographic apparatus at a rear projection screen on which the stimulus pictures were presented. A control picture was presented first, followed by a Negro content picture. Each picture was projected for ten seconds. Meanwhile a motion picture camera recorded pupillary changes of the left eye at a rate of two frames per second.

A month later the subjects were contacted again and asked to return for retesting. Of the 19 subjects, 17 were retested. One subject had left the country, another would not return. The retest procedure was the same as that used initially.

Data Analysis and Results. The pupillographic film record was projected and scored in a special apparatus. The pupil image was measured and magnified about 20 times its actual size. The scorer chose a convenient diameter and measured each frame with a millimeter rule. For purposes of analysis the average pupil diameter during the presentation of a Negro content slide was compared with the control slide period preceding it.

Of major interest is the difference between the anti-Negro and equalitarian subjects on mean per cent of pupil change over the 16 attitude-related stimuli. With rare exceptions the pupil diameter was larger for critical than for neutral stimuli. Moreover, the two groups did not differ either on the first or the second testing.

A comparison of the first and second testing provided stability data. The reliability of the mean per cent of pupil change was 0.59 (N=15). Within-subject test-retest reliabilities were also computed. They ranged from -0.38 to 0.74 across the 16 stimuli. The average intra-subject reliability over the 16 stimuli was 0.30.

d. Methodological Problems

In the course of Pilot Study A a number of methodological problems became apparent. Since an attempt was made to take account of these in subsequent research, they are described here. Woodmansee (1966) has published a description of these problems under the title, "Methodological Problems in Pupillo-graphic Experiments."

Light Reflexive Effects. In Hess' (1965) experiments with visual stimuli an emotionally neutral control picture was shown before each test picture. The pupil response (PR) was the change in pupil diameter from the presentation of the control picture to the presentation of the succeeding test picture, expressed as a percentage of pupil diameter during the control period. Control of the light reflex was as follows: (a) the control and test pictures were equated for overall brightness; (b) by a special photographic technique the brightness contrasts in the test pictures were reduced to a minimal level without the loss of important details. In this way the constriction effect of looking from a dark to a relatively brighter area in a test picture was minimized, but as Loewenfeld (1966) suggested the effect is still a significant influence. In one study using photographic stimuli, it was found that the pupil constricted 1%-5% when S's gaze was shifted from a relatively dark to a brighter area of a test stimulus prepared according to Hess' illuminance standards. The potential influence of the light reflex is sizable considering that reflex dilation responses to emotion-arousing stimuli generally average less than 5% of pupil diameter (e.g., Hess, p. 49). The problem is alleviated if it can be assumed that (a) individual differences in the extent of the light reflex (which are great) are randomly distributed in test groups and (b) an S's light-sensory experience is not systematically related to his psychological reaction to the stimuli. In the latter case an S might constrict to a test picture he did not like simply because he looked at an area of the picture that was brighter than the control stimulus.

An obvious solution is not to use visual stimuli; but if they are necessary, a short visual-effects test is suggested. In our laboratory a checkerboardlike picture was prepared so that each of the gray and white squares was an area about the size of the largest gray or white areas of the test pictures. Further, the squares were in illuminance as dark or bright as the darkest and brightest areas of the test pictures. This stimulus was presented to each S eight times with counterbalanced instructions to look either at a specified gray or white square. The average constriction from looking from gray to white squares was computed for each S, and test-group means were then compared to check for random distribution of individual responses.

To check on the possibility that Ss in any test group had, on the average, larger or smaller pupils simply because they looked at dark or bright areas in the test pictures, Ss were asked to identify what they looked at during the course of the experiment. Later, with the pictures projected as Ss had viewed them, spot-photometer illuminance readings were taken from the areas mentioned. The test groups were then compared with these data to determine whether they differed in their self-reported average light-sensory experience.

Arousal Decrement Effect. The pupillary muscles are under the influence of autonomic innervation wherein sympathetic, parasympathetic, and supranuclear mechanisms are simultaneously active to varying degrees. Specific reflexes are superimposed on this constantly shifting basic equilibrium (Loewenfeld, 1958). If the general level of autonomic activity increases by sensory or emotional stimulation, or by spontaneous thoughts, the pupil widens. Pupil size decreases with decreasing arousal accompanying loss of interest, boredom, or falling asleep.

In experiments wherein several control-test stimulus pairs are presented, and the basic datum is the relative change in pupil size from control periods to test periods, it cannot be assumed that basal pupil size reflected in control-period reactions remains constant throughout the experiment. Typically, control-period pupil size increases rapidly when the first few control-test pairs are presented, then decreases somewhat less rapidly as S adapts to or becomes less interested in the experiment itself. It has been found that this transiency in basal pupil size due to arousal changes can easily account for a 2%-3% dilation or constriction (actually dedilation) when comparing pupil diameter during a control period and its subsequent test period.

As a general rule alert Ss demonstrate rapid decrease in arousal after about 100 sec. of exposure to stimuli, so lengthy trials should be avoided. Tired Ss show this arousal decrement even sooner. The order of presentation of the stimuli should be varied within test groups to randomize arousal increment

and decrement effects across stimuli. Finally, if the PR for each test stimulus is based on the pupil size during the control periods both before and after the test stimulus the comparison of control and critical PR is thereby corrected for basal changes.

Effect of the Near-vision Reflex. With light stimulation constant there is a constriction of the pupil which coincides with convergence of the eyes and accommodation of the lens upon viewing a near object. Individuals vary greatly in terms of how close the near focusing must occur before the constriction effect begins to operate. In general, however, the older the person, the more pronounced the effect at a given distance. The extent of this problem was noted in the responses of a 50 year old male S to stimuli presented at a distance of about 80 cm. from the eye. The S was shown several pairs of control-test pictures. His PR to the test stimuli early in the series was the typical dilation response as he retained a focus on both control and test pictures. After several pairs he focused only on the test pictures and allowed his vision to blur on the controls (i.e., focusing nearer than the plane of projection), and this resulted in constriction responses of 10%-30%.

This problem may be minimized by using only Ss less than 30 years old, and by presenting the stimuli at a distance from the eye such that an S has no difficulty retaining his focus for the required period (3-4 m. is generally sufficient).

Problem of High Pupillary Variability. In diffuse light the pupil is in a constant state of "unrest." Pupillary diameter can be expected to change at least 1% from second to second and often as much as 10%-20% over a period of several seconds. For an S exposed to a control picture, these irregular and uncontrollable oscillations are generally as variable or more variable than during test-stimuli periods. The high degree of variability in the pupil reaction makes reliable measurement very difficult. Test-retest reliability is generally about .30 in single-trial designs used in studying psychosensory phenomena. With reliability this low, the need for caution in interpretation of findings is obvious.

Hakerem and Sutton (1964) in their study of psychosensory phenomena used a repeated measures design to deal with pupil variability. Woodmansee (1965) using an eight-trial design found that odd-even trial reliability was .43. There is evidence, however, that averaging the pupil response across repeated trials, while increasing reliability, may be inappropriate in the sense that it may mask changes in response during the course of the experiment.

Other Problems. In addition to methodological problems discussed above, there are other technical matters to be considered

in the design, execution and interpretation of pupillographic experiments. For example, the location of the mirror reflecting the image of the eye to the camera is of considerable importance in preventing distortion of the image. Since the work of Hess and his associates has created considerable interest in pupillographic work, a review article is being prepared (by Woodmansee) to serve as a guide to others who are planning studies. Topics to be covered by the article are as follows: historical perspective on pupillary research, neurological and ophthalmological considerations, apparatus design, preparation and presentation of stimuli, control of extraneous stimuli, scoring problems, significant subject variables, and suggestions regarding the solution of methodological problems.

e. Study B

As reported on Pilot Study A we found nothing in our exploratory work to encourage us to continue. On the other hand, as is made clear from the description of methodological problems encountered, it seemed possible that our lack of positive findings had been due to methodological difficulties. In addition, Hess reported that constriction to unpleasant stimuli occurred only after three to five 10-second presentations of the aversive stimulus. On the earlier presentations dilation had been observed.

For these reasons we decided to carry out a second study. A major change from the earlier study was to repeat the stimuli enough times to provide an opportunity for constriction to occur later in the presentation sequence. We chose eight presentations to be sure to cover the period of transition to which Hess had called attention. Some modifications in technique were made; these will be described below. Otherwise the study was basically similar to Pilot Study A in that equalitarian and anti-Negro subjects were shown pictorial stimuli expected to arouse unpleasant affect in the anti-Negro subjects.

Apparatus. The apparatus was essentially similar to that described in Pilot Study A. One major change was made. The translucent screen was removed from the back of the pupillograph box, allowing the subject to look through the box at a screen in the distance. A paper screen was positioned 3.6 meters from the subject's eyes and the pictorial stimuli were projected on this screen. This change was made to take account of the danger, mentioned in the methodological discussion above, that constriction would take place as a result of refocusing the eyes on a near object following blurring or loss of focus while a control slide was being shown.

Development of Pictorial Stimuli. Six black and white slides were used to project the pictorial stimuli. One of

these was the "control" picture used by Hess. It had a plain white background with the numbers one through four in the corners and five in the center. Four of the pictures were related to racial attitude. Two of these had been rated as disliked by a group of 23 introductory psychology students selected at random. One of these pictured an extremely slovenly Negro man. The other pictured an interracial couple - a Negro man seated with a white woman standing behind him. She had her arms around him while they looked at some papers. Two of the pictures containing Negroes had been rated as liked by this same group of students. One of these showed a young white and a young Negro boy playing together. The other showed a Negro performer together with a group of other well-known entertainers, some white, some Negro; all are laughing. The sixth picture was meant to arouse strong negative feeling in all of the subjects. This picture was of a filthy toilet in a broken down wash room.

All slides were prepared according to Hess' technique and following his illumination standards. The overall brightness of all slides was kept at the level he uses. This level was set with the same light meter he employs, the Gossen Lunasix Meter. Moreover, in terms of his standards the six slides did not vary from one another in overall brightness by more than .5 units as measured by this meter. Hess' control standards for stimuli also call for control of dark-light contrast within each slide. His standard here is that the lightest point in a slide should vary no more than .5 units from the darkest-- as measured by a Pentax spot photometer.

Data Collection. The subjects were 22 white female undergraduates. Eleven subjects had, in previous testings, expressed strong anti-Negro sentiment on a self-report attitude inventory (the Multifactor Racial Attitude Inventory). The scores for the anti-Negro subjects fall in the most anti-Negro quartile of attitude scores from 536 students tested in 1963-64 at the University of Colorado and Colorado Women's College. The other 11 subjects were persons who had been identified with pro-civil rights activities (e.g., membership in CORE, participation in civil rights protests, volunteer work in biracial projects, and marriage to a Negro).

Subjects were given a visual acuity test to provide assurance that they were able to see the stimuli clearly. They were also given tests to determine the extent of their light reflexive pupil changes in response to variations in brightness in the slides used. These tests were made with two special checkerboard slides made up of light and dark squares. The overall brightness of one of these slides was somewhat greater than the other; the difference between the two equaled the difference between the least bright and most bright slides of the six used in the experiment. Within each of the two slides the difference between the light and dark squares equaled the difference

between the lightest and darkest areas in the pictures in the critical slides. Using these slides it was possible to show that the light reflexive reactions of the two groups of subjects did not differ for the range of brightness used in the critical slides. Individuals, of course, do differ in this respect from each other.

Each subject was shown the four Negro-content pictures, the toilet picture and the control slide. Each content slide was preceded by the control slide. The order of presentation varied from subject to subject and within subjects from presentation to presentation. After all five of the content pictures had been seen at least once, the subject made ratings on interest and affect for each picture including the control. When the ratings were completed the subject returned to the pupillograph for the remaining seven presentations. At the end of the stimulus presentations the subject rated the stimuli a second time on the affect and interest value scales. When the subject had completed these ratings she was asked to recall what parts of each picture were looked at most. As noted in the methodological section above, it could happen that subjects who dislike a picture might look at lighter portions of it and for this reason show constriction (or less dilation) than subjects looking at darker portions of the same picture. Fortunately, the two groups of subjects being compared in this study were quite similar to each other in their reports of the parts of pictures at which they looked most. When the brightness level of these areas was averaged for the two subject groups no difference was found.

Data Analysis and Results. When the two attitudinal subgroups are compared in terms of their pupil change from control to content picture, using data from all eight presentations of the slides, no differences are found. This is true of the individual Negro-content pictures as well as for any combination of them. Average changes to all content slides are characteristically in the dilation direction. This is also true of the pupil change in response to the toilet scene, although the eleven anti-Negro students taken as a group respond to this scene with an average change of 2% in the negative direction.

If one limits himself only to the data from the first presentation the outcome is somewhat different. Here when the four Negro-content stimuli are treated together there is a significant difference ($p < .01$) between the two subgroups, with the equalitarian subjects showing the greater dilation, 2.65% against -0.10% for the anti-Negro subjects. Also, if one combines only the three Negro-content stimuli to which the equalitarian subjects had given a higher rating for "liking" than had the anti-Negro subjects, the difference between subgroups becomes even greater, 3.37% for the equalitarians vs. 0.37% for anti-Negro subjects ($p < .01$).

In the methodological discussion above it was pointed out that the pupil diameter becomes gradually less over a period of time in a test situation. For this reason it seems best to compare the pupil diameter for an experimental slide with the average pupil diameter for two control slides, one before and one after the experimental slide in question. When this procedure is used to reanalyze the data, the differences reported above all disappear.

It might be true, of course, that different subjects even within the same subgroup react with different degrees of negative affect to different stimulus pictures. An aspect of the experimental procedure called for the subjects to make ratings of the degree to which they liked or disliked each of the five pictures. The pupillary change scores may be correlated with these ratings. When this is done, using the data from all eight presentations, the correlation is .01. When the data from the first presentation only are used the correlation is .24. In neither case is the relationship high enough to be encouraging. An article describing these results is being prepared by Woodmansee for publication in Science.

f. Study C

In view of the potential importance to our attitude research program of the work reported in Study B we decided to repeat this study, with some modifications, on southern college students. This was done at Wake Forest College in North Carolina.

Apparatus. The apparatus used was identical to that described in Study B.

Development of Material. Pictures similar to those in Study B were used. There were four attitude-related pictures. One was an intimate picture of an interracial couple, a Negro man and a white woman, cheek-to-cheek and smiling. A second picture was of two slovenly Negroes, one man and one woman, both apparently drunk. A third was of a young Negro boy and a young white boy lying peacefully together on the floor of a living room. The fourth picture was of a well-dressed Negro man sitting quietly at a table on which there was a bottle of liquor.

Two other pictures were included to provide a basis for comparison with the attitude-related pictures. These pictures were selected to be pleasant and unexciting. One was of a seascape with gulls flying over the seashore. Another pictured a cat and dog sitting together. The final slide was the Hess control slide already described. All slides were made according to the brightness and contrast standards recommended by Hess and described in earlier studies.

Data Collection. The subjects were 20 Wake Forest College students, half of whom were male and half female. Ten of the students were selected from the upper quintile of a distribution of Wake Forest students on a self-report attitude inventory (Multifactor Racial Attitude Inventory) and were clearly equalitarian. Ten were selected from the lower quintile and were clearly anti-Negro. All subjects were shown each slide 15 times with rest periods between each series of presentations. A content slide was preceded and followed by the Hess control slide. Only presentations 1, 2, 5, 10, 14 and 15 were photographed; however, the subjects did not know this. The basis for using this lengthened series of presentations was an observation made in Study B. The data of that study suggested a movement in the direction of constriction on the latter two of the eight presentations used.

After the 15 presentations were concluded subjects rated all pictures for the amount of affect they had experienced when shown the picture. As expected, anti-Negro subjects gave clearly stronger ratings of dislike to three of the Negro-content pictures than did the equalitarian subjects. On the fourth picture, that of the two slovenly Negroes, the dislike ratings were equivalent for the two subgroups.

Analysis of Data and Results. Again no evidence of pupillary constriction was found. Nor did the two subject groups differ in their reactions to the Negro-content pictures.

Data were analyzed separately for each of the six presentations photographed. Both subject groups showed dilation responses to the attitude-related Negro pictures. The order of magnitude was 6% to 7% on the average for the early presentations and 3% to 6% for the later presentations. (See discussion of arousal decrement in the methodological section above). Dilation responses were still occurring for both anti-Negro and equalitarian subjects on the 14th and 15th trials. No difference between subgroups was found on any trial. Nor were there any observable trends in this direction. The results were similar for all pictures considered individually.

Reactions to the non-Negro slides were also analyzed. The results were similar to those above. The only difference was that the degree of dilation to the non-Negro slides seemed somewhat less although not markedly so.

g. Study D

The purpose of this study was to attempt another test of the hypothesis that persons react to negative emotional states with pupillary constriction. In view of our failure to demonstrate this with pictorial material related to racial attitudes we decided to choose other material where we could be more

certain of the emotional impact.. A gruesome murder of a college girl occurring in the early summer of 1966 on the campus of the University of Colorado provided an opportunity for such a study.

Apparatus. The apparatus described in earlier studies was used in this study.

Development of Materials. It was possible to obtain a photograph of the room in which the murder took place. The photograph had been taken at a point in which the room was still in the condition of disarray in which it had been found following the murder. Since the local newspapers had carried full details for a considerable period of time we had every reason to think that with the picture we could reinstate, particularly in female subjects, the feeling of horror experienced by persons who were in Boulder at the time. Some preliminary exploration substantiated the fact that the picture served to bring back the strong feelings occurring at the time of the murder.

The picture was made into a slide with the usual considerations for overall brightness and contrast between light and dark areas which have been described in Pilot Study A, Study B and in the discussion of methodological problems. A control slide was made from a picture of another room, furnished in a commonplace and uninteresting manner.

Data Collection. Fourteen subjects were selected from among the group of female college students who were present in Boulder when the murder occurred. The critical picture was shown to the subjects nine times. Each showing was preceded and followed by the control picture of the second room. The nine repetitions were arranged in sets of three each. Following each set of three showings the subjects were allowed to examine the pictures at their leisure. In this manner we hoped to facilitate the transition, which Hess describes, from a state of arousal (producing dilation) to a state of aversion (producing constriction).

Following the experiment the subjects were asked to describe their feelings when viewing the photograph of the murder room. Eight clearly reported a revival of their emotional disturbance. Six were less clear, reporting also boredom, lack of interest, etc. The two subgroups were treated separately in the analysis.

Data Analysis and Results. Again no constriction was found. Nor were there any differences in degree of dilation between the two subgroups differing in degree of reported rearousal of emotional feelings.

The degree of dilation to the first presentation of the murder room picture was significantly different from zero in each of the three sets of three presentations each. The order of magnitude

was 1% to 2% dilation. The degree of dilation was not significantly different from zero on the third presentation in each set. Occasionally, the difference was significant on the second presentation.

h. Study E

Our inability to find evidence of constriction using attitude-related visual stimuli led us to consider the possibility of using auditory stimuli instead. As we have indicated in the discussion of earlier studies the use of visual stimuli presents difficult technical problems. There are many sources of potential influence upon pupil size in a situation in which the nature of visual stimulation is changing. The use of an unchanging and homogeneous visual field should minimize, if not eliminate, many of these technical difficulties.

Although Hess has not reported evidence of constriction with auditory stimuli he has described work in which the pupil dilation to visual stimuli was changed by verbal material. The pictures he used were of presidents and presidential candidates. He photographed the pupil reaction of three groups of people to five different photographs of President Johnson and five of Goldwater along with a single photograph of former Presidents Kennedy and Eisenhower. One group then read anti-Johnson material, another read anti-Goldwater material and the third read from excerpts from a psychology journal that had no political content. Then each group was retested. The people who read anti-Johnson material showed a slightly smaller response than before to Johnson and a slightly larger response than before to Goldwater. Extremely anti-Goldwater material had a different kind of effect. While it caused the expected decrease in response to Goldwater, it also caused a large drop in response to Johnson and even Eisenhower. The only person unaffected was Kennedy. Hess concludes that this may indicate that bitter campaign propaganda can lower a person's attitude toward politicians in general. He believes that Kennedy was spared for obvious reasons.

There would seem to be no objection to using auditory stimuli to produce the emotional reaction presumably responsible for pupillary change. The arousal of both positive and negative emotions through the use of words is familiar in everyday experience.

Given these considerations, we decided to carry out our next study with verbal stimuli presented orally to the subject.

Apparatus. The apparatus used was similar in most respects to that described in Study B. It consisted of the Hess pupillograph with the translucent screen removed from the back in order to permit the subject to look through at a paper screen approximately nine feet away. In the center of the screen was a geometrical design drawn with thin lines to provide the subject

something upon which to focus. The overall brightness of the area at which the subject looked was kept equivalent to that used in the visual stimuli prepared by Hess and duplicated in our laboratory in previous studies. The verbal stimuli (two-word phrases to be described below) were presented by tape recorder. This recorder was wired to a small bulb on the recording camera. When a phrase was sounded on the tape recorder this bulb flashed momentarily providing light through an aperture in the camera sufficient to expose one frame on the roll of film. This enabled scorers to separate the 18-20 frames associated with one stimulus from the following 18-20 associated with the next.

Development of Verbal Stimuli. It seemed desirable to have the verbal stimuli roughly comparable in the speed with which their meaning was conveyed to the subject. This would make the photographs taken in a 10-second period following stimulus presentation comparable in the sense that they follow by a roughly equal amount of time the onset of the different stimuli.

We chose two-word phrases as the best compromise between meeting this requirement and providing enough words to convey a range of emotional meaning. Seventy-five such phrases were composed. The intent was to make 25 of them as pleasant as possible, 25 as neutral as possible and 25 as unpleasant as possible. A rating study with college girls as subjects was carried out. Twelve phrases resulted from this study. The modal rating for four of these was the most positive rating possible on a 13-point rating scale. These four were moonlit beach, loving father, warm embrace and devoted husband. Four were given modal ratings of seven, the mid-point of the rating scale. These were plastic cup, white string, yellow pencil and paper bag. Four were given modal ratings of one, the extreme negative end of the rating scale. These were strangled child, burned flesh, bloody rape and rotting corpse. These phrases were read into a tape recorder at 10-second intervals with a standard intonation. Each affective phrase (positively or negatively) was preceded and followed by one of the neutral phrases. An order of positive and negative stimuli was arranged that made it difficult to predict which type of phrase would appear next. There were six repetitions of the affective phrases. A rest period was allowed following the series of phrases making up each of the six presentations. An adaptation period, incorporating several neutral phrases, preceded the beginning of each presentation of critical phrases. In order to increase the probability that each subject had similar associations to the phrases used, a series of descriptive paragraphs were prepared; each attempted to give a graphic description of the phrase in question. The phrase describing rotting corpse reads as follows:

"Pieces of rotting skin fell to the ground as the attendant sank his fingers into the crumbling flesh and lifted the body onto the stretcher. A teeming clump of white worms marked the place the body had lain."

These paragraphs occurred at the beginning of the tape. The subjects pupils were photographed while the paragraphs were being read.

Data Collection. Ten female college students were used as subjects. These were persons similar to those that participated in the rating experiment on the basis of which the two-word phrases had been chosen. Each subject was photographed while listening to the tape described above.

Following the experiment each subject rated the 12 phrases on a seven-point scale ranging from very unpleasant to very pleasant. Mixed in with the experimental phrases were 12 new phrases which had been given roughly equivalent ratings in the original rating study. The purpose of this final rating was to determine whether phrases which had been repeated six times in the course of the experiment would continue to be reported as comparable in affect to 12 similar phrases which were being heard for the first time. The results of these post-experimental ratings showed that the experimental phrases continued to be rated as extremely positive, extremely negative, and neutral, and did not differ in rated affect from the 12 phrases which had not been used in the experiment.

Data Analysis and Results. A score for each presentation of each of the eight positive and negative phrases was derived by dividing the diameter of the pupil by the average diameter of the pupil in response to the neutral phrase preceding and the neutral phrase following the affective phrase in question. The result was expressed in terms of the usual per cent increase or decrease of the pupil size to the critical stimulus over the pupil size to the neutral stimulus. Means for the positive phrases and for the negative phrases, for each subject and over all 10 subjects were computed for each presentation.

None of these means is significantly different from zero. The means for 10 subjects for all six presentations are positive (showing dilation) for positive phrases. Four of the six means for negative phrases are positive. The two which are negative barely differ from zero, one being $-.54\%$ and the other being $-.03\%$. Inspection of the means for individual subjects within each of the six presentations taken separately reveals no consistent tendency for selected individual subjects to show constriction responses to negative phrases and dilation responses to positive phrases.

On the other hand, if one looks at the results in terms of the means for the first three presentations against the means for the last three presentations a small trend may be observed in the direction expected from Hess' report of constriction to aversive stimuli on later presentations. On the first three presentations the mean response to positive phrases is almost identical to the mean response to negative phrases, both representing a dilation of approximately three-fourths of one per cent. However, if one examines the picture for the last three presentations the mean for positive phrases is .94%, while that for negative phrases is -.19%.

While these differences are very probably random in character the fact that the trend is in the expected direction requires that we obtain additional subjects to determine whether it holds up. An additional group of 10 subjects will be studied in the Fall of 1966.

i. Work Proposed

The ~~overall~~ impression created by our studies of pupillary change is that it is highly unlikely that this phenomenon will represent a reliable physiological indicator of attitude. We have found it impossible to produce responses which can be interpreted as constriction. Moreover, we can detect no differences in degree of dilation to attitude-related stimuli on the part of subject groups known to contrast sharply in racial attitude. Unless we receive some encouragement from the follow-up work on Study E above, it would seem unprofitable to continue research along this line. As noted in the introductory discussion of pupillary change the advantage of this phenomenon as a physiological indicator rests entirely upon the possibility that it is bi-directional in character. Should this prove not to be the case it would be wiser to use physiological indicators such as GSR, heart rate and vasoconstriction which are more feasible to measure reliably in the average laboratory.

B. Generalization of Conditioned Evaluative Responses

a. Background

Much work has been done in the field of learning on the generalization of conditioned responses. In the area of attitude, Volkova (1953) has reported that a subject who has been conditioned to salivate in response to "good", will salivate in response to statements that seem to him to represent something good but not in response to statements suggesting something bad, even though the words "good" and "bad" are not used in the statements. The intensity of the response is taken as an indication of the extent to which a subject considers the statement good.

b. Work Proposed

We plan to adapt this technique to the study of attitude toward social groups, using vascular constriction (which is more easily measured than salivation) as the response. The response will first be conditioned to a stimulus with clear evaluational significance (e.g., "good"); after conditioning has been established, statements relevant to the attitudinal object will be presented. As a check on the reliability of the results, we plan to use two different evaluational dimensions (e.g., "good-bad," "desirable-undesirable"). Each subject will be conditioned in one session to the positive end of one of these dimensions (e.g., "good"), in another session to the negative end of the other dimension (e.g., "undesirable"). The test statements, responses to which will provide the basis for inference about attitude, will be the same in the two sessions, and will consist of descriptions of states of affairs that can be seen as good or bad, depending on the respondent's attitudinal position. To the extent that the test is reliable, items to which there is maximum response when a subject has been conditioned to the positive evaluative term should evoke minimum response when he has been conditioned to the negative term.

8. Measures Based on Verbal Self-Reports

Most investigators infer social attitudes from introspective self-descriptions provided by the S. Whether the S presents his views in response to open-ended interview questions or in structured questionnaires, little doubt exists that he can present an inaccurate view of himself; this may be in response either to his expectations of what other people feel to be desirable, or to his own values with respect to what is just and proper. The major focus in this research program is directed at finding a variety of indicators of social attitude less subject to influences of the sort to which self-report measures are susceptible. Nevertheless there are several reasons for continuing to work with such measures as an aspect of the program.

Outline

- A. Multifactor Racial Attitude Inventory
- B. Susceptibility of Multifactor Racial Attitude Inventory to Faking
- C. Empathic Reactions
- D. Reactions to Discriminatory Practices
- E. Derogatory Beliefs
- F. Pro-Negro Generalizations
- G. Interviews
- H. Differential Social Distance
- I. Forced-Choice Inventory

A. Multifactor Racial Attitude Inventory

a. Background

For some years it has been customary for psychologists to describe an attitude toward a social group as composed of three aspects or components--cognitive, affective, conative (policy orientation) (e.g. Smith, 1947; Kramer, 1949). This way of looking at the attitude construct has become so common as to find its way into general psychology textbooks (e.g. Kimble & Garnezy, 1963).

Efforts to measure attitude, on the other hand, have not been influenced by the three-component analysis of the construct. In his chapter, Attitude Measurement, in the Handbook of Social Psychology, Revised Edition, Scott (in press) does not mention it. Hence, the three-component orientation to attitude, although widely accepted, remains, from the point of view of measurement, a matter of speculation.

A first step toward bringing theory and measurement together was taken by Collins and Haupt. Conventional Negro content items were compiled and sorted on an a priori basis into three categories. Statements of belief about Negroes were considered cognitive items, statements of feelings about Negroes and willingness to participate with Negroes (social distance items) were designated as affective items, and statements of policy toward Negroes as a group (items with a "should" or "ought" verb form) were called conative items. Within each category an attempt was made to cover a broad range of content. However, when the items were factor analyzed little support emerged for the three-component idea. Instead four content-defined factors were found. One factor has to do with policy toward integration of the races, another with racial equality and two others with the nature of social relationships into which the respondent is willing to accept Negroes.

b. Purpose

With the Collins-Haupt work as a beginning we have conducted three extensive studies of the organization of verbally-expressed racial attitudes. These studies, conducted in sequence over a period of three years, had two objectives. The first was to extend the search for components of racial attitude. The second was to prepare satisfactory subscales for the measurement of each such component. The methods by which we proceeded are described below, study by study. The results of the studies will be presented in a single discussion.

c. Study A

The first objective of Study A was to replicate the Collins-Haupt analysis. The second was to extend an inquiry begun in that study into a subscale which might serve to detect those individuals who respond falsely in the unprejudiced direction, i.e. who represent themselves as having more favorable attitudes than is in fact

the case. In addition to 60 attitudinal items, the Collins-Haupt inventory contained 40 statements intended to contribute to this subscale. In their factor analysis Collins and Haupt differentiated two types of items among these 40 statements. They identify one type as involving the denial of ambivalence or self-consciousness in situations which typically make whites feel uncomfortable, regardless of their attitude toward Negroes, e.g., "I probably would feel somewhat self-conscious dancing with a Negro in a public place." The second type assigns to Negroes as a group certain personal attributes which would make them superior to whites, e.g., "The Negro must possess deeper moral strength than the white man since he has come as far as he has in the face of far greater obstacles." As it turned out most of the items in this second, or "overfavorableness", category are keyed such that an "agree" response increases the respondent's "overfavorableness" score. Of the several factors which Collins and Haupt described, only "overfavorableness" showed this potential confounding with acquiescence response set. We undertook to eliminate this difficulty by adding 20 statements of the "overfavorable" type in which a "disagree" rather than an "agree" response would be the overfavorable choice.

Procedure and Subjects. The revised 120 item inventory was administered following several indirect measures of attitude toward Negroes (see Selltitz, Edrich & Cook, 1965). The subjects were paid for their participation. They were 593 white college students of U.S. citizenship from three geographical areas; Northeast, Midwest, and border South. They were selected so as to represent a wide range of racial attitudes. 159 came from pro-integration organizations while 192 belonged to anti-Negro groups: right wing political clubs or racially exclusive fraternities or sororities. Another 242 were recruited through classes, through advertisements in college newspapers and through announcements in college dormitories. Subjects were informed that their personal opinions were to be assessed as part of an extensive program of research on opinion measurement techniques.

Analysis. Following the strategy of the Collins-Haupt study we factor analyzed the 120 item inventory. To be consistent with that study, a principal axes solution was used in factoring the correlation matrix with unities in the diagonal, and the first seven factors were rotated to a varimax solution.

d. Study B

The objectives of Study B were two-fold. The first was to test, through a second factor analysis, our interpretation of the meaning of the factors identified in Study A. Based on the Study A results we first chose 51 of the items from the 120-item inventory. Of the deleted items, most proved to be redundant in content and their contribution to the variance could be taken care of by the items retained. A few other items had low loadings on all of the

Study A factors and were dropped for this reason. Together these omissions made way for 42 new items. In choosing new items, our intention was to have as broad a sample of item content as possible. Accordingly, the literature on verbal measures of attitude was reviewed for useful items (e.g. Hinckley, 1932; Kramer, 1949; Fishbein, 1961; Triandis, 1964).

The second objective of Study B was to broaden our work to include examination of the factor structure of another group of attitude measures--those produced by Harding and Schuman. The work of these investigators represents a major attack on the components of attitudes toward minority groups and, hence, it seemed highly desirable to integrate our work with theirs.

Schuman and Harding (1963; 1964) hypothesized three attitudinal components: sympathetic identification with the underdog, justice, and rationality. Sympathetic Identification with the Underdog, as embodied in their Reactions test, is assessed by estimates of reactions of minority group members who have been subjected to derogatory treatment. One of several alternatives portrays the minority group member as hurt or angry; this is scored as a sympathetic or empathic answer. Justice, measured by their Social Problems test, consists of descriptions of discriminatory acts. The respondent records his reaction to these acts in terms of both social policy and personal practice. Rationality is tapped by the Paired Generalizations test; in each item the respondent must choose between a pair of statements. In some pairs one alternative allows him to be irrationally unfavorable to members of a given minority group ("generalizations anti"). In others, one alternative allows him to be irrationally favorable ("generalizations pro").

The Harding-Schuman version of these measures contained items applying to a number of minority groups. Since we were working with Negro items only we changed some items so that they referred to Negroes rather than to the group about which they had been originally written.⁴

Procedure and Subjects. The revised inventory plus the three modified Harding-Schuman measures were administered as part of a battery of measures of "opinions and attitudes on a variety of social issues." The subjects were 609 white college students of U.S. citizenship from two geographical regions, the midwest and the border South. Most were tested in or recruited through large introductory college courses such as engineering orientation, English and psychology. A representation of anti-Negro opinion was assured by recruiting through two Southern fraternities which had openly opposed integration. Some subjects were tested in class and others were paid for participation in two one-hour testing sessions outside of class.

Analysis. Two analyses were carried out using Tryon's multivariate analysis computer program, BCTRY (Tryon & Bailey, 1966).

First, the inventory items alone were analyzed; and second, the inventory and Harding-Schuman items together were analyzed. In both cases a principal axes solution with a varimax rotation was carried out. Instead of confining the factor structure to seven dimensions as in Study A, the number of dimensions was limited by the communality exhaustion criterion of .95. In the diagonal of the correlation matrix were the highest absolute correlations of each item with all other items. For the second analysis, that encompassing the total set of inventory and Harding-Schuman items, the factor analysis was supplemented by a cluster analysis.

e. Study C

The first objective of Study C was to continue our investigation of the components thus far identified and to explore other leads which grew out of Study B. A second objective was to determine the reliability and validity of each component.

In the Collins-Haupt work and in Studies A and B several factors had consistently emerged. In the present study the item content which best defined these factors was included in another revision of the inventory. As in Study B our goal was to further verify and, where necessary, extend the length of the various item clusters in order to have available homogeneous subscales of about 10 items each. Accordingly, new items were composed. Some of these were suggested by the content of Harding-Schuman items which in Study B had had strong loadings on factors which had remained stable throughout our work.

In addition to those items where there was a clear factorial overlap between our inventory and the Harding-Schuman measures, there were three distinct subsets of items unique to the latter. One of these sets was a subgroup of items referring to the issue of private rights in integration situations; such items were found in the Social Problems measure, but not in our inventory. All these items were rewritten in the format of the inventory. A second set of items representing empathic reactions to mistreatment of Negroes, as measured by the Reactions test, were not assimilated into the inventory because the items can not be adapted to the agree-disagree format. Instead the original Reactions format was retained and additional items were written to extend this questionnaire to 13 items. A third set of items was found in the Paired Generalizations measure. These items are among those which Harding (1962) calls "pro-Negro generalizations". We did not attempt to assimilate these items into the inventory because, like the Collins-Haupt "overfavorableness" factor, they have been shown to have little value as a measure of attitude toward Negroes (see details in Woodmansee & Cook, 1965).

Several respondents to the inventory suggested that we had overlooked an important aspect of attitude toward Negroes, namely, whether the process of desegregation should be carried out rapidly

or gradually. This led us to hypothesize a "gradualism" factor and to include items reflecting this issue in the revised inventory. The final form of this revision included 145 items.

Subjects. The subjects were 630 white college students of U.S. citizenship from schools in two border south cities and two western states. Of the 630 subjects, 313 were chosen for their participation in groups which might be expected to have a majority of members holding a specified attitude toward Negroes. We regarded these subjects as criterion groups against which to assess the validity of our attitude dimensions. The groups and the assumptions about their members' attitudes are listed below:

- Group I: Subjects assumed to have strongly equalitarian attitudes and to be actively concerned with race relations (e.g. CORE, NAACP, race relations councils).
- Group II: Subjects assumed to have equalitarian attitudes but not the active concern of Group I. Students who voluntarily expose themselves to attitude-related issues in elective race relations classes fit this description.
- Group III: Subjects assumed to have somewhat anti-Negro attitudes but not to be actively concerned with questions of race relations. Groups having a high proportion of members of this type are hard to identify. An earlier study by Selltitz and Cook found a higher proportion of moderately or extremely anti-Negro subjects in right-wing political organizations than in other student groups; therefore, subjects for Group III were recruited from these organizations (e.g. Young Americans for Freedom).
- Group IV: Subjects assumed to be anti-Negro and to be actively concerned with race relations. Social fraternity groups which had recently gone on record on their campuses as being opposed to inclusion of Negroes in their membership were solicited as respondents in this study.

All of these subjects were paid for their participation in the study.

The remaining 317 subjects were persons whose attitude toward Negroes was unknown. Of these 107 were from a school in a southern city and were solicited by means of newspaper ads for subjects offering money for participation in two hours of "opinion testing." The remaining 210 subjects were unpaid volunteers from Introductory Psychology at the University of Colorado. All 630 subjects completed the revised inventory, but only the non-criterion group subjects completed the Reactions test.

Analysis. Tryon's cumulative communality key cluster analysis (CC5 portion of the BCTRY computer system) was used to explore the

structure of the 145 items in the revised inventory and the 13 items in the Reactions test. Since BCTRY is limited to 120 variables in a single run, two runs with overlapping items were required. After comparing the results of runs 1 and 2, a third run was made in which only those items were used which appeared to define the various factors in runs 1 and 2.

As the first step in assessing the validity of the item subgroups or "clusters" as potential scales of attitude toward Negroes we cluster-scored the responses of the 317 criterion group subjects. Cluster scores were based on those ten items (five "+" keyed, five "-" keyed) which best defined each of the 10 dimensions in the inventory. By items "best defining" a cluster, we mean those items which either have consistently clustered with the same items in previous analyses, or in the case of new items, have clearly shown that they are useful representatives of the stable factors in the present analysis. The cluster scoring was done in a simple additive manner, with the cluster score being increased by one point for each item which elicited a pro-Negro or equalitarian response from the subject. The range of scores on each cluster thus was 0-10. For each cluster an analysis of variance was done across criterion group levels. In order to compare the relative usefulness of the ten clusters as scales of prejudice, two relatively simple indices of cluster discrimination were employed. One index is the ranking of the correlation ratio, eta, the magnitude of which we estimated from the F ratio. Eta indexes the subscales' ability to predict the criterion of attitude group membership. This ranking was done for each geographic region separately since it was expected that the discriminatory ability of the scales might be region-specific. While the ranking of eta's provides a way of judging how the subscales compare with each other as measures of prejudice, it does not show the magnitude of intra-scale differences between the scores of anti-Negro subjects and equalitarian subjects. To show this we computed the difference between the largest and the smallest mean.

Using the responses of the 317 criterion group subjects, the internal consistency of each item cluster was also computed.

f. Results

The results of the series of studies described above make it possible to identify ten distinct content dimensions within the various revisions of the inventory. Five dimensions, first isolated in the Collins-Haupt study, have appeared in each of our subsequent analyses. These are listed below with an illustrative item:

Integration-Segregation Policy: i.e., the respondent's position on the propriety of racial segregation and integration. "The Negro should be afforded equal rights through integration." Collins and Haupt labeled this dimension Militant Integration.

Acceptance in Close Personal Relationships, i.e., personal willingness to recognize, live near, or be associated with Negroes.

"I would not take a Negro to eat with me in a restaurant where I was well known." This is the dimension which Collins and Haupt called Residential-Personal Social Distance.

Negro Inferiority, i.e., assertions which imply or directly state that Negroes are inferior to whites in terms of motivation, character, personal goals, and social traits. "Many Negroes should receive a better education than they are now getting, but the emphasis should be on training them for jobs rather than preparing them for college."

Negro Superiority, i.e., attributing to Negroes personal characteristics which make them superior to whites. "I think that the Negroes have a kind of quiet courage which few whites have." Collins and Haupt called this Overfavorableness.

Ease in Interracial Contacts, i.e., social ease in interracial situations in which a majority of whites probably would feel self-conscious or uncomfortable. "I would probably feel somewhat self-conscious dancing with a Negro in a public place." The Collins-Haupt label for such items was Denial of Ambivalence.

A dimension that we call Derogatory Beliefs was uncovered in Study A and has reappeared in our subsequent studies. The items reflecting this dimension are of two types. One says that Negroes are backward in a social, moral or educational sense, e.g., "Although social equality of the races may be the democratic way, a good many Negroes are not yet ready to practice the self-control that goes with it." The other disapproves Negro social behavior in relation to whites, e.g., "Some Negroes are so touchy about getting their rights that it is difficult to get along with them." Both types of items characterize at least some Negroes as being prone to a variety of relatively minor shortcomings. The items, for the most part, are essentially true and reasonable statements of everyday fact, but in tone they may be taken as subtly degrading and derogatory judgments against Negroes in general.

In Study B three additional dimensions emerged and were replicated in Study C. One dimension we call Local Autonomy because the items defining it pit the policy-making prerogatives of local collectives against the prerogatives of those outside the collective to guarantee the Negro's civil rights, e.g., "Even though we all adopt racial integration sooner or later, the people of each community should be allowed to decide when they are ready for it."

In Study B a second new dimension was found in Harding and Schuman's Social Problems scale, and has been termed Private Rights. This has to do with the individual rights of businessmen, club members, landlords, etc. who oppose integration on the basis of their individual rights of free association or choice of clients, e.g., "A hotel owner ought to have the right to decide for himself whether he is going to rent rooms to Negro guests."

The third dimension found in Study B concerns the respondent's acceptance of Negroes in positions where they are in authority or are socially superior to whites; thus the designation Acceptance in Status-Superior Relationships. An example is: "If I were being interviewed for a job, I would not mind at all being evaluated by a Negro personnel director."

The tenth dimension found in this series of studies refers to how rapidly the process of integration should take place. The dimension was first studied in Study C and has been labeled Gradualism. An illustrative item is "Gradual desegregation is a mistake because it just gives people a chance to cause further delay."

g. Validity and Homogeneity of the Subscales

Table 1 gives the analyses of variance of subscale scores of criterion groups within each geographical region. F ratios are significant beyond the .01 level in all cases. Due to the heterogeneity of variance among the criterion groups the accuracy of the determination of probability levels is questionable. However, the size of mean differences and the regular progression, in most cases, of mean scores from the most equalitarian to the most anti-Negro group adds confidence to the conclusion that the differences are significant.

Also provided in Table 1 is Cronbach's (1951) coefficient alpha, an index of subscale homogeneity. As may be seen, the subscales have adequate internal consistency although Negro Superiority, Negro Inferiority, Derogatory Beliefs, and Ease in Interracial Situations are somewhat less homogeneous than the others.

Table 2 shows the relative discriminatory power of the subscales as measures of attitude toward Negroes. They are ranked in terms of the size of eta for each region.

h. Work Proposed

Based upon the work done to date we have made available a self-report attitude inventory (called Multifactor Racial Attitude Inventory) for general use in attitude assessment and attitude change studies. The first 60 items make up a short form highly correlated with the score based on the total inventory. The long form is based upon 90 items. In addition there is a research subscale of 10 items (i.e., Negro superiority) on which we hope eventually to base a correction for representing one's self as more favorable than is, in fact, the case. The 90-item inventory is itself made up of nine 10-item subscales. This inventory is now being used by a number of investigators in their own research projects. A test manual has been prepared for their use.

While I do not intend to give high priority to further work on this inventory, I will follow it up as the occasion permits itself.

Recent work has suggested that there are probably two additional clusters of items which we do not have represented. One of these clusters represents a dimension ranging from the belief that the Negro's status must be improved through education to a belief that his status can only be improved through changes in social legislation. The second cluster has to do with beliefs about racial intermarriage ranging from approval and convictions that the outcome would be advantageous to disapproval on both moral and practical grounds.

New items representing these two clusters will be added to the inventory. Data will be collected in the course of research dealing primarily with other matters. When sufficient data become available we will again factor analyze the items in an effort to determine whether the inventory should be extended from the present 10 subscales to 12 subscales.

Table 1

Homogeneity of Subscales and Analyses of Variance of
Subscale Scores of Criterion Group Subjects, by Region

Subscale	Homogeneity	Criterion Level	Western ^a		Border South ^b	
			\bar{X}^c	s.d.	\bar{X}	s.d.
Integration- Segregation Policy	.92	I	9.82	0.39	9.80	0.72
		II	9.49	1.46	7.92	2.84
		III	6.46	3.60	4.00	2.94
		IV	7.41	2.79	5.11	3.40
			F=17.85**		F=33.72**	
Acceptance in Close Personal Relationships	.93	I	9.73	0.46	9.49	1.09
		II	8.37	2.85	5.00	3.82
		III	6.49	3.71	3.26	2.88
		IV	6.15	2.87	2.39	2.76
			F=11.19**		F=49.98**	
Negro Inferiority	.79	I	9.18	1.01	8.97	1.15
		II	8.47	1.48	7.56	2.12
		III	6.83	2.67	5.66	2.17
		IV	6.76	2.12	5.02	2.82
			F=14.07**		F=24.90**	
Negro Superiority	.77	I	3.00	2.35	3.29	3.27
		II	1.60	2.12	2.88	2.88
		III	1.29	1.30	1.53	1.70
		IV	2.11	1.72	1.16	1.55

Table I (con't)

8-12

Subscale	Homogeneity	Criterion Level	Western ^a		Border South	
			\bar{X}^c	s.d.	\bar{X}	s.d.
			F=4.35*		F=6.89**	
Ease in Interracial Contacts	.80	I	7.18	1.92	4.91	2.64
		II	2.54	2.20	1.76	2.09
		III	1.77	1.50	1.29	1.31
		IV	1.43	1.15	1.23	1.67
			F=56.67**		F=29.41**	
Derogatory Beliefs	.78	I	7.18	1.37	7.03	1.84
		II	5.41	2.30	4.28	2.09
		III	3.00	2.00	1.66	1.66
		IV	2.89	1.83	2.18	1.54
			F=33.75**		F=70.85**	
Local Autonomy	.90	I	9.32	0.84	8.89	1.64
		II	7.04	3.09	6.08	3.59
		III	2.89	2.88	2.42	1.97
		IV	4.89	2.90	2.43	2.38
			F=30.12		F=63.34	
Private Rights	.92	I	8.68	0.99	7.97	1.85
		II	5.99	3.52	4.12	3.24
		III	0.83	1.36	1.63	2.14
		IV	3.17	3.00	1.05	1.71
			F=45.17**		F=76.63**	

Table 1 (con't)

8-13

Subscale	Homogeneity	Criterion	Western ^a		Border South	
		Level	\bar{X}^c	s.d.	\bar{X}	s.d.
Acceptance in Status-Superior Relationships	.90	I	9.96	0.21	9.80	0.53
		II	9.15	1.66	7.96	2.49
		III	7.60	3.26	5.63	3.20
		IV	7.63	2.52	5.09	3.41
			F=9.25**		F=23.40**	
Gradualism	.90	I	7.45	2.86	7.00	2.62
		II	4.32	3.38	3.36	3.53
		III	1.00	1.46	1.18	1.72
		IV	2.39	2.41	1.00	1.48
			F=29.13**		F=53.90**	

^a N for each criterion level: I=22, II=68, III=35, IV=46; and
df = 3 X 167 for all Western region analyses.

^b N for each criterion level: I=35, II=25, III=38, IV=44; and
df = 3 X 138 for all border South analyses.

^c The greater the mean score the more equalitarian the attitude.

* Significant at .01 level.

** Significant at .001 level.

Table 2

Discriminating Effectiveness of the Various Subscales as Indicated
by Eta and the Maximum Difference between Criterion Group Means

Rank (eta)	Subscale	Western		Border South		
		Eta ^a	Max. Diff. in Means	Subscale	Eta	Max. Diff. in Means
1	Ease in Interracial Contacts	.71	5.8	Private Rights	.79	6.9
2	Private Rights	.67	7.9	Derogatory Beliefs	.78	5.4
3	Derogatory Beliefs	.61	4.3	Local Autonomy	.76	6.5
4	Local Autonomy	.59	6.5	Gradualism	.74	6.0
5	Gradualism	.58	6.4	Acceptance in Close Personal Relationships	.72	7.1
6	Integration- Segregation Policy	.49	3.4	Integration- Segregation Policy	.65	5.8
7	Negro Inferiority	.45	2.4	Ease in Interracial Contacts	.62	3.7

Table 2 (con't)

Rank (eta)	Western			Border South		
	Subscale	Eta ^a	Max. Diff. in Means	Subscale	Eta	Max. Diff. in Means
8	Acceptance in Close Personal Relationships	.41	3.6	Negro Inferiority	.59	4.0
9	Acceptance in Status-Superior Relationships	.38	2.4	Acceptance in Status-Superior Relationships	.58	4.7
10	Negro Superiority	.27	1.7	Negro Superiority	.36	2.1

^a Estimated from the F ratio

B. Susceptibility of Multifactor Racial Attitude Inventory to Faking

A study of the susceptibility of self-report attitude items to "faking" was carried out on 154 Ss. The first version of the self-report inventory described above was used in this study.

Responses to the attitude items showed marked shifts between administration under standard instructions and administration under instructions to make a good impression. This means that, as we had expected, the direct attitude inventory can easily be "faked."

Examination of the responses under the "fake good" instructions showed that there is among the usual college population (at least in the midwest) a clear norm that the socially acceptable attitude toward Negroes is one of lack of prejudice. In addition, moreover, acceptance of Negro Superiority items also went up under "fake good" conditions. In other words, among college students the socially acceptable norm for unprejudiced behavior includes the picture of the unprejudiced person as one who says that Negroes as a group are better in some respects than white persons as a group.

C. Empathic Reactions

a. Background

The recent work of Harding & Schuman presents a theoretical conceptualization of the nature of prejudice. According to these investigators prejudice is conceived as a failure on the part of an individual to achieve norms of justice, sympathetic identification with the underdog, and rationality. Justice is conceived as having concern for the rights of all people in society. Sympathetic identification with the underdog is conceived as concern for the feelings of others or of having empathy for them. Rationality is conceived as recognizing the validity of arguments relatively unaffected by one's own feelings.

Harding and Schuman have prepared measures of each of their proposed dimensions, incorporating items having to do with a variety of ethnic groups.

b. Purpose

The Harding and Schuman work constitutes the major contemporary empirical investigation of the components of social attitudes other than the program of the present investigator. Hence, as noted in the discussion of the MRAI above, it seemed highly desirable to examine the relationship between the measures growing out of their program and the self-report measures originating in this program. For this reason we have included their most promising instruments in a test battery used with a very large number of Ss in three regions of the country. As already noted, this has permitted both a study of the factors or components involved in the instruments and an exploration of their validity against criterion groups differing in racial attitudes.

c. Study A

Development of Materials. In order to develop a form of the test dealing only with racial attitudes, we took from the larger inventory which Harding & Schuman call "Reactions" only those items having to do with sympathetic identification with Negroes. There were ten such items in multiple choice form. Each item presents a situation that confronts a Negro and S indicates what the feelings of the Negro in the situation is likely to be. Example: A Negro is called "boy" or "Black Sambo" by his superintendent. Answers that S can choose range from non-committal types of responses such as, "the story doesn't give enough information," through indifferent types of responses as, "he is likely to have become used to it," through responses that the Negro is pleased with his lot as in "he may well regard it as a friendly, informal way of speaking

to him," to sympathetic identification with the Negro in a response such as, "he probably resents it."

Data Collection. In the first part of the study aimed at collection of material for factor and cluster analyses, the Empathic Reactions test was administered along with the Multifactor Racial Attitude Inventory and other Harding-Schuman instruments to 609 Ss in the Rocky Mountain area and the border South. (See Study B under section on the Multifactor Racial Attitude Inventory). In the second part of the study it was administered to 534 Ss in criterion groups in three regions of the country--241 in the Northeast, 199 in the Rocky Mountain area and 94 in the border South.

Data Analysis. Both factor and cluster analyses show the empathic reaction items to form a distinguishable subscale. Seven items show satisfactory factor and cluster loadings. While the factor represented by these items is intercorrelated with other factors, the correlations are relatively low.

The study of the relationship between empathic reactions and attitude as indicated by membership in criterion groups, gave quite encouraging findings. The relationship was highly significant in all three regions, .45 in the Northeast, .38 in the Rocky Mountain area and .73 in the border South (eta coefficients). While except for the border South these relationships are not particularly high, it will be recalled that these items are not highly correlated with other self-report attitude items. This fact opens up the possibility that they might serve as efficient components of a prediction battery.

d. Study B

A 13 item version of the Harding and Schuman Reactions Test (limited to Negro items) measuring sympathetic identification with the underdog was included in a second study. (See Study C under the section on Multifactor Racial Attitude Inventory). It was administered to 317 subjects and included in an item cluster analysis with 145 items of the type used in the Multifactor Racial Attitude Inventory. This analysis confirmed the fact that these items represent a distinguishable cluster or factor. This finding plus the validity data available from Study A has led us to recommend the use of the modified version of the test in conjunction with the Multifactor Racial Attitude Inventory when self-report attitude measures are desired. We have made this modified version of the Reactions Test available along with the Multifactor Racial Attitude Inventory and the accompanying Test Manual.

e. Work Proposed

No further work is contemplated on this instrument in the immediate future. A satisfactory set of items is now available and will be used in the future only when we are investigating the interrelationships of indicators shown to be related to attitude as indicated by criterion group membership. Also, in the event that further analysis of the factor structure of self-report measures of attitude is undertaken, this scale will be included.

D. Reactions to Discriminatory Practices

a. Background

This study is based on the work of Harding and Schuman, discussed in this report under the Multifactor Racial Attitude Inventory and under Empathic Reactions, and represents their "justice" dimension. Their name for the test involved is Social Problems.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the earlier discussions.

c. Study A

Development of Materials. This instrument, as Harding and Schuman used it, covered a variety of minority groups. We selected only the five items referring to Negroes. Each presents a social situation involving Negroes and whites. To each of these situations three responses are required. Example: A Negro enters a barbershop, is refused service and told to go to the barbershop that serves Negroes. The three questions asked of S are (1) "Should the head barber have been willing to give the Negro a haircut?," (2) "Is it all right for some barbershops to refuse to serve Negroes?," and, (3) "Would you mind going to a barbershop that refused to serve Negroes?" As in this example, each item raises the integration-segregation policy issue in the abstract and asks the S what action he would take in the situation as well as what he thinks of the behavior of the persons described as participating in the discriminatory action.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (see Study A under section on Empathic Reactions).

Data Analysis. The factor and cluster analyses show that a number of the items in this set are quite similar to those in the Multifactor Racial Attitude Inventory which define the integration-segregation factor. Items from the Harding-Schuman group having to do with integration of schools and other public facilities form a cluster with similar items from the Multifactor Inventory.

Another group of items from the Reactions to Discriminatory Practices form a cluster of their own. The characteristic of this set of items is that it appears to pit private rights against the values of integration. A typical item is as follows: "Is it all right for a private tennis club to refuse to admit Negroes?" To make clear the difference

between this group of items and the integration-segregation factor above, note than an item which appears there is "Is it a good idea to have separate tennis clubs, bowling leagues, and so on for whites and Negroes?" In the latter case, the integration question is raised in isolation from the rights of a private social club.

A study of the relationship of the Harding-Schuman Social Problems items and racial attitude as indicated by membership in criterion groups gave highly significant results. Correlations were high in all three regions, .64 in the Northeast, .53 in the Rocky Mountain area, and .86 in the border South (eta coefficients).

d. Work Proposed

It proved to be possible to convert items from the Social Problems test to the agree-disagree form of the Multifactor Racial Attitude Inventory. This conversion was undertaken with some of the integration-segregation policy items in order to broaden the integration-segregation factor in that Inventory.

In addition, the items which contrasted private rights of persons with the values of integration were also converted. As might be predicted from this study, they formed a new item cluster in the cluster and factor analyses conducted later and are now part of the current version of the MRAI.

Since our work on self report attitude items has already profited fully from the Reactions to Discriminatory Practice test we plan no further work with it.

E. Derogatory Beliefs

a. Background

This is one of two parts of a Harding and Schuman measure which they called Paired Judgments. Together with the test described in Section F below, it attempts to measure their rationality dimension. Their general conceptual scheme has been described in the section above on Empathic Reactions.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the discussion of the Empathic Reactions items.

c. Study A

Development of Materials. The Harding-Schuman instrument covered a variety of minority groups. We limited ourselves to the racial items. This gave us eight pairs of statements to which S responds by choosing the "more correct" of the two. S then indicates whether he is not very, moderately, or very sure of his choice. Example: Statement A - "In general, Negroes who have openly opposed segregation in the South have shown unusual self-restraint and courage." Statement B - "It takes no special virtue for Negroes to oppose segregation openly in the South." In this case the choice of Statement B contributes to the anti-Negro generalizations score; the amount of the contribution depends upon the certainty with which S indicates he is sure of his choice.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (See Study A in the section on Empathic Reactions).

Data Analysis. The factor and cluster analyses show that these items are most similar to the Negro inferiority items of the Multifactor Racial Attitude Inventory. However, the factor loadings are not high. Some of the items are found with other factors; this apparently is a consequence of the nature of the item content.

The study of the relationship between this part of Harding and Schuman's Paired Judgments Scale and attitude as indicated by membership in criterion groups showed clear and significant results. The correlation was substantial in all three regions, .41 in the Northeast, .52 in the Rocky Mountain area and .76 in the border South (eta coefficients). As

noted above, these items are not homogeneous and if used further in a prediction battery should probably be incorporated as components of other subscales.

d. Work Proposed

No further work is contemplated on these items in the immediate future.

F. Pro-Negro Generalizations

a. Background

These items constitute the second part of the Harding-Schuman Paired Judgments test. They differ from the items discussed above in that one of the statements of the pair is intended to represent an unrealistically favorable generalization about Negroes.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the discussion of the Empathic Reactions items (See Section C above).

c. Study A

Development of Materials. From the larger Harding-Schuman test covering a variety of minority groups, we selected the seven item-pairs which deal with Negroes. S responds by choosing the "more correct" statement of the two in the pair. S then indicates whether he is not very, moderately, or very sure of his choice. Example: Statement A - "The percentage of children born to unmarried mothers is higher among Negroes than among white people." Statement B - "The percentage of children born to unmarried mothers among Negroes is about the same as among white people." The choice of statement B in this item represents an unrealistically favorable generalization; the size of the score received by S depends upon the certainty with which he indicates he has made his choice.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (See Study A in the section on Empathic Reactions).

Data Analysis. When factor analyzed together with MRAI items most of the items from the favorable generalizations section of the Paired Judgments test form a distinguishable subgroup of their own. These items have the characteristic that they assert equivalence of Negro behavior to white behavior in areas where the facts are clear to the contrary (the Negro's less adequate performance presumably being due to the influence of low socioeconomic status). Examples are the assertions that the proportionate frequency of illegitimacy and murder is no higher among Negroes than among whites. These items differ from the Negro Superiority subscale of the Multifactor Racial Attitude Inventory in that the latter assert the superiority of Negroes as a group.

The study of the relationship between this part of the Paired Judgments scale and attitude as indicated by membership in criterion groups gave statistically significant findings, but of lower magnitude than is true of the other tests in the Harding-Schuman group. The eta coefficients obtained in the three regions are as follows: .35 in the Northeast, .18 in the Rocky Mountain area, and .60 in the border South. In this respect these items behave in a similar fashion to the Negro Superiority items of the Multifactor Racial Attitude Inventory where the correlations with attitude as indicated by criterion group membership were also low.

d. Work Proposed

We hope to go ahead with an exploration of a "correction" subscale to correct self-report attitude scores for distortion due to considerations of social desirability. It appears that the type of items represented by the Harding-Schuman pro-Negro generalizations might be a candidate for inclusion in such a correction score. As yet we have devised no approach to the validation of a correction score in which we have confidence.

G. Interviews

a. Background

Work on interviewing has established the fact that respondents' answers may differ according to the interviewer's characteristics and behavior. It seems likely that in the area of social attitudes many respondents will assume that the interviewer approves of unprejudiced views and the respondents may therefore try to appear unprejudiced.

b. Purpose

We started from two assumptions: (1) that one of the major probable extraneous influences on responses to interview questions is the individual's wish to present a certain picture of himself, either to impress the interviewer favorably or to protect his own self-image; and (2) that when the interviewing is done under academic or other "respectable" auspices, most subjects will assume that the responses which will present them in the most favorable light are those which represent them as well-adjusted, tolerant, rational, open-minded, democratic. Thus we are working with interviewing techniques designed to make it easier for the individual to reveal himself as not well-adjusted, not tolerant, etc., or to make it harder for him to portray himself, falsely, as well-adjusted, tolerant, etc.

Specifically, with respect to attitudes toward social groups (racial, religious, or national), we planned two approaches: one in which it is emphasized that experts differ in their views on the questions being asked, and one in which the questions assume that the respondent holds certain negative views toward the object. In the first approach, for example, when the attitudinal object is Negroes, the introductory statement to one section of the interview might run:

"The Southern Regional Council, a bi-racial organization interested in improving Negro-white relations in the South, found in November, 1958, that the main barrier to Negro voting was not intimidation, but apathy. However, another recent study reports, 'Violence, terror and intimidation have been, and still are, effectively used to disfranchise Negroes in the South.'"

The thought here is that such a statement carries the implication that there are well informed and respectable people who hold negative views about Negroes (in this case), and thus makes it easier for the respondent to express any such views that he may hold.

In the second approach, a typical question might read: "What would be your objections to being treated by a Negro doctor?" This, of course, is similar to Kinsey's approach of asking, not "Have you ever . . .?," but "When did you first . . .?" or "How often do you . . . ?" The question tacitly assumes that people hold certain negative views and thus presumably makes their expression easier. The respondent

who does not hold these views can reject the question. Early exploratory work suggested that this second approach offered more promise and led to the studies reported in the pages to follow.

c. Pilot Study A

Development of Materials. Questions were worded in such a way as to make the interviewer sound anti-Negro. The purpose of this, as noted, above, was to make it easier for the subject to reveal such anti-Negro views as he might have. This was accomplished in two ways. One of these was to have the interviewer precede the question by stating an anti-Negro premise. The second was to have an interviewer ask a leading question which presumed an anti-Negro answer. An illustration of both of these procedures is given below.

The civil rights movement has caused quite a lot of disfavor, particularly the pickets and demonstrations. A lot of times the demonstrations don't have any actual connection with the situation--for example, take the sit-ins at the White House and other federal building around the country over things that are happening in the South. Don't you think that things like that do more harm than good to the cause of the Negro?

The interview was presented to the research subjects as a public opinion survey of college students. Of the 32 questions in the interview 15 dealt with race relations. The remainder were questions about high interest topics such as the war in Viet Nam, capital punishment, communism, etc. The 15 questions related to race relations were spaced throughout the interview. Considerable attention was given to developing "question contexts" such as urban housing. Within such a question context questions unrelated to race relations were asked first after which came the questions involving race. The latter appeared to flow naturally from the over-all context.

The sub-areas of race relations from which questions were chosen were determined in large part by the factor studies of attitude items carried out in connection with development of the Multifactor Racial Attitude Inventory.

Interviewers were trained to use this type of question and preliminary work was carried out to determine whether or not the technique could be used in a standardized manner. Experience indicated that it could.

After a number of interviews had been administered and tape recorded, an attempt was made to develop scoring categories for each question on a five-point dimension ranging from very unfavorable to very favorable toward Negroes. This effort made it clear that some of the questions needed revision and that most of them needed additional standard probes to clarify types of answers which otherwise would be uncodable.

Data Collection. This first pilot study concentrated on subjects whose attitudes were in the "middle range." It made the assumption that such persons, by contrast with those with extreme attitudes, are more influenced in their responses to questions by their expectations of what might be approved by other persons (such as interviewers).

The question raised in the study was whether respondents would give more anti-Negro answers to the slanted interview questions than would comparable persons answering unslanted questions. In order to make this comparison it was necessary to prepare a "straight" form of the interview using unslanted questions dealing with identical topics.

Subjects were chosen for the study on the basis of their scores on a self-report attitude inventory (the Multifactor Racial Attitude Inventory). Only those subjects were used who fell between plus or minus one sigma of the mean of University of Colorado students on this inventory. Students within five points of each other in score were constituted as pairs, one being interviewed with the slanted interview and one with the straight interview. Members of a pair were of the same sex and were interviewed by the same interviewer. Nine pairs of subjects were interviewed. All interviews were tape recorded.

Data Analysis. Each interview was coded by two judges. Because of the pilot character of the study no attempt was made to obtain coders who were naive with respect to the question being asked in the experiment. The coders were trained to anticipate the "halo" effect of answers given on earlier questions on the perception of answers given to later questions. Intercoder reliability was high.

Results. The interview results were analyzed question by question. Of the 15 questions related to race relations nine gave more anti-Negro answers on the slanted interview than on the straight interview. On the remaining questions little or no difference between the two interviews was obtained. In a number of cases the lack of difference was due to the fact that all subjects gave equalitarian answers regardless of the interview form. We concluded that the slanted interview showed enough of a tendency to produce the predicted results to make it worthwhile to conduct a second study.

d. Study B

The purpose of this study was to carry further the development of the "slanted" interview on which exploratory work was done in Pilot Study A. One objective was to determine the degree to which subjects were consciously aware of the deliberately biased character of the interview. A second was to improve the interview by eliminating questions which had not differentiated between the "slanted" and "straight" forms of the interview in the pilot study. A third was to make both a broader and more intensive study of the impact of the slanted questions upon subjects' responses than had been possible in the pilot study. Specifically, in this study, the comparison of slanted and straight interviews was broadened beyond students with middle-range

attitudes to those with strong equalitarian and strong anti-Negro attitudes as well.

Subjects' perception of the interview and the interviewer. The original interview was administered to ten subjects in order to determine the extent to which they might be aware of the biased character of the introductory premises preceding the questions and the questions themselves. Following the interview the subjects were asked for their impression of the interviewer's own position on several of the major issues covered in the interview, including the race relations issue. The subject was also asked about his impressions of the way the questions were worded, "Were they fair and objective or did you think them unclear or perhaps biased in one direction or another?" No subject indicated that he thought the interview to be anti-Negro nor the questions to be biased. If we take this information at face value we may conclude that the subjects were not consciously aware of the nature of the interview. This is a promising finding since it reduces the likelihood that any effect of the slanted interview upon the subjects' answers would be outside of awareness -- i.e., not due to a conscious adjustment on his part to the "slant" built into the interview.

Revision of items. Questions which had not contributed to the differences found between the slanted and unslanted interview forms in the pilot study were either revised or eliminated. These questions were of two types. One dealt with topics on which opinion was so uniform and conviction so strong that responses were apparently not influenced by the question form. Such questions were eliminated. Another type involved a "projective" principle; the subject was asked why some specified group of people reacted to Negroes or to Civil Rights legislation in a hostile manner. We had assumed that the slanted interview form might cause subjects to interpret such people as more anti-Negro than did the unslanted form but this turned out not to be the case. In the revision the focus of such questions was changed to apply directly to the subjects' own views.

Development of coding categories and standardization of probes. After we had arrived at a final form of the interview, coding categories were developed. The answers to each question were arranged on a five-point continuum from most anti-Negro to most equalitarian. The 35 interviews given during the work on question revision were examined for illustrative answers. Additional probes were formulated where necessary to clarify the subject's position when his original answer was ambiguous or off the main point. In addition, the first twenty interviews from the current study were also examined for the purpose of further standardizing the coding categories.

Data collection. As in Pilot Study A, the principle objective of Study B was to compare the responses to unslanted and straight interviews given by matched pairs of subjects. As noted earlier the subjects were to include an anti-Negro group and an equalitarian group as well as a middle-range group. A total of sixty subjects were interviewed, twenty

in each of these three subgroups. Subjects were identified by means of a self-report attitude inventory (Multifactor Racial Attitude Inventory) given by another experimenter in a different setting than the one used for this study. For the equalitarian group favorable students available were used; all were more than one standard deviation above the mean score for University of Colorado students on this inventory. Similarly the most anti-Negro students available were used for the anti-Negro subgroup; each of them was one standard deviation or more below the student mean. The subgroup of students with middle-range scores were within a few points of the mean. Ten pairs of subjects were recruited for each subgroup. Each pair was of the same sex and within five points of one another on the MRAI inventory score.

The subjects were approached with the information that they were part of a randomly selected scientific sample being used in a public opinion survey. The interviewer did not know the attitude subgroup to which the subject belonged nor the identity of his paired counterpart.

Coding. Coding was carried out by two trained coders. Neither knew the purpose of the study. They knew nothing about the subjects whose responses they were coding. They were told that the two forms of the questions to which the subjects were responding represented an old and a new form of the interview. The intercoder reliability was .97 (Pearson r of total scores on thirty pairs of cases).

Results. Non-parametric tests (Friedman two-way analysis; Wilcoxon matched pairs signed ranks) of the significance of differences between scores obtained with the two forms of the interview were carried out. For all pairs the interview scores were significantly more anti-Negro on the slanted interview (as expected) than on the unslanted (difference significant at $p < .10$ on the Friedman; at $p < .03$ on the Wilcoxon). When the above analysis was repeated by attitudinal subgroups it developed that the effect is found among the more anti-Negro subjects and among the subjects with middle range attitude scores ($p < .05$ or better) but not among the more equalitarian subjects.

The failure to find an effect of interview form among the equalitarian subjects as compared to the success in demonstrating it among anti-Negro subjects may be accounted for by the relative extremity of attitude among the two groups. The equalitarian sub-group represents a rather narrow range of strongly convinced equalitarians. In the slanted interview they consistently reject the anti-Negro introductory premise and the implied expectation in the slanted question. Students in the anti-Negro sub-group on the other hand are more variable. The score range in this sub-group is twice that of the score range in the equalitarian sub-group. Moreover, one does not get the more extreme anti-Negro position well represented among Colorado undergraduates. We may assume that the attitudinal position in the (moderately) anti-Negro sub-group is less firm than in the (strongly) equalitarian sub-group and hence more susceptible to influence by slanted interview questions.

In order to determine whether some items contributed more than others to the over-all difference between the two types of interviews a comparison of results item-by-item was carried out. The distribution of scores obtained with the slanted interview form on a single question was compared for the total group of subjects with the distribution obtained with the unslanted form of the same question (chi square; Wilcoxon matched pairs signed ranks). This analysis showed five of the 16 race relations questions producing significant differences at levels ranging from $p < .01$ to $p < .06$.

e. Study C

A replication of the study described above is in process using Southern college students as subjects. Data collection will be completed during the Fall of 1966.

f. Work Proposed

On the basis of our findings to date there seems little reason to doubt that interview form does have an effect upon the answers subjects give to race related questions. This effect is minimal or absent in the case of subjects whose degree of certainty about their attitudinal position is quite high. Within sub-groups whose members have less extreme attitudes some individuals show more of the influence of interview form than do others.

We have recognized from the beginning that such a finding would be susceptible to two interpretations. One of these is that under the slanted interview the subject is free of the strong equalitarian expectation created by the university setting and university-connected interviewers and is thus more free to describe his actual beliefs and feelings. However, the other equally plausible interpretation is that the subjects who receive the slanted interview are influenced by it in such a way as to give more unfavorable responses than are in truth characteristic of them. While we have no definitive way in which to choose between these two possibilities there are two types of studies which might throw some light on the question. One of these is a study in which measures of susceptibility to social influence are administered to the same subjects who receive the slanted interview. This would make it possible to ask whether subjects whose scores on the slanted interview are more anti-Negro than would be expected (from the scores of matched subjects on the unslanted interview) are also more susceptible to social influence as measured by tests of this characteristic. Such a finding would keep open the interpretation that scores on the slanted interview resulted from situational influences which distorted true attitudes rather than revealed them. However, since we must assume that it is equally likely that the socially susceptible person had had his MRAI inventory answers distorted in a favorable direction by the university setting in which he gave them, we cannot take such a finding as unambiguous.

The second type of study would test both the slanted interview, the unslanted interview and the self-report attitude inventory (MRAI) against a criterion of attitudinal group membership. This would make it possible to determine whether such a criterion could be better predicted by the slanted interview than by either the unslanted interview or the inventory alone.

I hope to carry out both types of studies in the near future.

H. Differential Social Distance

a. Background

Westie (1953) has developed a social distance questionnaire in which Ss are asked to rate their willingness to accept hypothetical persons described in terms of race and occupational status (e.g., "white janitor," "Negro banker") in various situations or relationships; the score is based on the difference between ratings of Negroes and whites of the same occupation in a given situation or relationship. Westie states that this instrument seems less susceptible than most self-report measures to distortion by the desire to give socially acceptable responses; presumably this is because the length and format of the test make it difficult for S to remember, for example, exactly how willing he indicated he was to accept a "white janitor" as a dinner guest when he comes to the item calling for a parallel rating for "Negro janitor."

b. Purpose

Our basic interest was to discover whether modifications in the test would make it less susceptible to influence by considerations of social desirability. Since the Ss were northern college students, we assumed that any lessening of the influence of social acceptability would lead to freer expression of avoidance of Negroes and thus to higher difference scores on the form of the test that was least susceptible to social acceptability influence.

c. Study A

Development of Materials. We modified the instrument in two ways: (1) by adding the attribute of religion to the hypothetical person; (2) by changing the format to make it harder for S to see the pattern of his ratings. Combinations of these modifications gave four forms of the test.

Data Collection. These tests were administered to 102 northern college students: 46 members of "liberal" organizations; 56 members of "extreme conservative" organizations. Two versions of the test were administered to each S, two weeks apart.

Data Analysis. The primary results were entirely negative. Scores did not vary as a function of the form of the test taken, nor was there any consistent relation between scores on the different forms and scores on several social desirability scales.

There were a few findings of secondary interest. First, intercorrelations of the forms (tetrachoric r) average .92, suggesting that they might be used as alternative forms should such a need arise. Second, a small number of Ss had sizable negative scores indicating greater acceptance of Negroes than of whites of parallel status. This was one of the observations that gave impetus to our interest in developing a subscale to be used as a correction for scores on self-report measures. Third, such differences as were found between the liberals and conservatives on the total test were due primarily to differences on two of the four subscales. These two contain items referring to residential and personal-social relationships. On the remaining two, dealing with the use of public accommodations and the holding of public positions, no differences were found. The suggestion is that among northern college students the pattern of racial separation (or, at least, of reported separation) is now concentrated on relationships which may be thought of as private or which may carry implications for one's social status.

d. Work Proposed

At the moment we see no advantage in working further with this technique.

I. Forced Choice Inventory

a. Background

Within the past decade, questionnaires requiring a choice between items matched for social acceptability have been used extensively in the measurement of personality (e.g., Edwards, 1957). However, relatively little use has been made of this technique in attempts to measure social attitudes. I have discovered one unpublished scale in which anti-Negro items from the Adorno F-Scale were paired with items derogatory to other minorities. This work was done by Reynolds while a graduate student at Michigan State. No data are given to indicate the extent to which the item pairs were matched for social desirability. Evidence is offered that students at Louisiana State University more frequently choose the anti-Negro statements than do students from Michigan State University.

We have studied intensively the literature reporting and reviewing the use of the forced-choice technique in the personality area. We find that the technique has come under serious attack in recent years, on the following grounds: the difficulty and perhaps impossibility of equating items for social desirability (e.g., Jackson, 1961; Messick, 1960); little difference in the results of forced-choice questionnaires and traditional questionnaires (e.g., Travers, 1951); the frequency of negative and uncooperative reactions of Ss because of the difficulty, uncongeniality, and apparent unreasonableness of the task, leading to careless responses and thus to unreliability (e.g., Levonion et al., 1959). The first of these problems (that of devising items that are of equal social acceptability but of different import for attitude) seems especially severe in the case of social attitudes where there are clear norms of social acceptability.

b. Work Proposed

While I am not encouraged by the review of the literature to believe that the forced choice technique is promising in attitude measurement I do feel that it should be explored. To date it has sufficiently low priority that no plan of research has been developed. Exploratory work on the possibility of devising attitudinal items matched by social acceptability will be carried out when time and facilities permit.

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